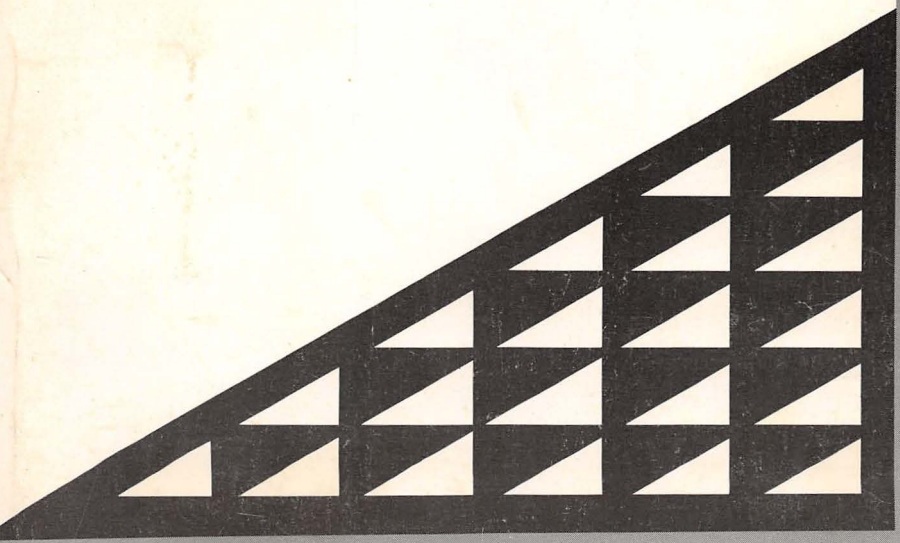
Bridge

Bridge-File
Owner's Manual



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SYSGEN Bridge-File Owner's Manual

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Using This Manual

This manual contains procedures explaining how to install and use the Bridge-File diskette drive with PC/XT/AT and PS/2 Model computers.

Subject matter divisions can be identified by the stiff gray pages inserted before the following parts of the manual:

- Installation sections (dark index tabs, keyed to various computers, can be used to locate the appropriate section)
- Software Installation and Operation
- Problem Solving Guide
- Reference

Installing the Bridge-File

To make the most effective use of the instructions provided, we suggest you follow these basic guidelines to use this manual.

- Read through this chapter, *Getting Started,* to get oriented to the Bridge-File and learn about its capabilities.
- Turn to the *Installation* chapter that corresponds to your model computer. The pointers on the first grey divider help you quickly locate your computer.
- Check the shipping carton contents to make sure that you have the correct adapter for your computer and all necessary parts have been included.
- Install the Bridge-File adapter, connect the drive cables, and install the Bridge-File software as described in the installation procedure.

Chapter 1

Getting Started

First Steps First

This manual is designed to help you get your Bridge-File working as quickly as possible. This first chapter tells you how to use this manual to find the information you need right now to install the Bridge-File and getting it working.

Experienced computer users can probably learn everything they need to know by skimming over the text and referring to the diagrams in the appropriate installation section. Novices and less experienced users should follow the text more closely to avoid difficulties.

Items of special importance are designated by an exclamation point in a block. Pay attention to these cautions; they are designed to protect your equipment and your personal safety.

> *Note*
>
> *Throughout the manual you will encounter a number of boxed notes, such as this, that provide details on various applications and situations that you may encounter when installing or using your Bridge-File.*

Most users do not have difficulty installing the Bridge-File if they follow through the step-by-step procedures. These procedures are specific to the computer into which you plan to install the Bridge-File.

- If you have any questions about the software installation procedure, turn to the *Software Installation* chapter for a complete explanation of the INSTALL program's questions.

- Power-on and operate your Bridge-File drive.

Consulting the Problem Solving Guide

Just in case your Bridge-File does not operate properly following installation, we've included a chapter devoted to solving common difficulties. Refer to Appendix A, *Problem Solving Guide*, if you cannot get your Bridge-File working.

If the *Problem Solving Guide* does not provide the help that you need, our Technical Support staff can diagnose and resolve your problems on the telephone, usually in just a few minutes.

README

Your Bridge-File distribution diskette may contain a READ.ME file containing the most recent information about the drive and software. If this file is on the software diskette, consult it before beginning the installation procedure. To access the information, place the Bridge-File diskette in drive A: and type:

TYPE A:READ.ME <Enter>

Electrostatic Discharge

Electrostatic Discharge, or static electricity, can damage sensitive electronic components, such as the integrated circuits found on your Bridge-File adapters. Take precautions whenever handling circuit boards outside of your computer.

The following precautions should be taken to reduce the risk of circuit damage from electrostatic discharge.

- Handle circuit boards only by their edges.

- For maximum protection against electrostatic discharge, place a grounding mat underneath your computer, or wear a wrist grounding strap whenever working inside an open computer.

- Install circuit boards as soon as they are removed from their protective anti-static packaging. Do not leave boards exposed after they are unpacked.

Consult your computer dealer to obtain anti-static products.

What is the Bridge-File?

The SYSGEN Bridge-File is an add-on diskette drive, available in 5.25-inch and 3.5-inch formats, that can be installed on almost any IBM PS/2, PC, XT, AT, or compatible computer. The 5.25-inch Bridge-File is designed for use with PS/2 products; the 3.5-inch Bridge-File, for the IBM PC/XT/AT and compatibles.

However, with the correct adapter, either version of the Bridge-File works with any of the computers mentioned.

Once installed, the Bridge-File can be used in the same manner as any other diskette drive on your system.

Diskette Capacity: 5.25-inch

The 5.25-inch Bridge-File for IBM PS/2 computers has a maximum capacity of 1.2 Megabytes. The Bridge-File can be used to read and write both 1.2-Megabyte and 360-Kilobyte diskettes, and to format 1.2-Megabyte diskettes. Formatting 360-Kilobyte diskettes is subject to the same limitations that apply to all high-density 5.25-inch drives in the industry today (see the section in the chapter *Using the Bridge-File* on High-Density vs. Low-Density formatting).

Diskette Capacity: 3.5-inch

The 3.5-inch Bridge-File has a maximum capacity of 1.44 Megabytes. The Bridge-File can be used to format, read, and write both 1.44-Megabyte and 720-Kilobyte diskettes. When used with the IBM PC, XT or compatible computers, the 3.5-inch

Bridge-File can only be used to format, read, or write 720-Kilobyte diskettes unless you use SYSGEN's Omni-Bridge controller. Using SYSGEN's Omni-Bridge floppy disk controller for XTs allows the 3.5-inch Bridge-File to read, format, and write 1.44-Megabyte diskettes.

Bridge-File Adapters

Each Bridge-File drive matches up with an adapter that equips it for operation with a specific model of computer. This adapter provides the necessary signals to handle different diskette densities (in computers normally limited in this regard, such as the AT), and to provide appropriate drive select lines to extend the number of floppy drives that can be added to a system (useful when working with the PS/2 models). Power for external Bridge-File drives is also routed through the adapter.

The adapters are discussed in more detail later in this chapter and in Appendix C, *Technical Reference.*

Omni-Bridge Controller

SYSGEN's Omni-Bridge floppy disk drive controller accommodates up to four floppy devices, and provides high-density capabilities to systems that normally can't handle 1.2-Megabyte 5.25-inch drives, or 1.44-Megabyte 3.5-inch drives.

This manual tells how to install the Omni-Bridge with an external Bridge-File in PC, XT, and AT compatible computers. See the chapter titled *Installation, PC, XT, and AT Compatibles.* For any other information about the Omni-Bridge controller, see the *Omni-Bridge Owner's Manual,* supplied with the Omni-Bridge controller.

Hardware Prerequisites

To install the external Bridge-File on any PS/2 or PC/XT/AT compatible computer, there must be at least one unoccupied expansion slot.

- On **PS/2 Model 25, 25 286, 30, 30 286,** and **PC/XT/AT-compatible** computers, a SYSGEN adapter installs in this slot.

- On PS/2 **Model 50 and up** computers, although an adapter will *not* be installed in the unoccupied slot, a special adapter cable will be attached to the rear panel of the system unit behind one of the slots. The use of this adapter cable may prevent the installation of an accessory board in that slot, depending on the size and physical characteristics of the accessory board.

If you are installing an internal Bridge-File 3.5 in a PC/AT computer, the computer must have an unoccupied 5.25-inch drive bay.

> *Note*
> *Depending on the power requirements for your system, you may also need an auxiliary power supply for the Bridge-File.*

Auxiliary Power Supply

Some early PC-type computers with low-powered power supplies may require an auxiliary power supply for the Bridge-File drive. See the *Reference* section of this manual for more information about the Bridge-File auxiliary power supply.

Host Adapter Selection

Through the selection of the appropriate adapter, the Bridge-File can be connected to most of the major computers currently available in the PC and PS/2 marketplace .

When you purchased the Bridge-File, you were provided with an adapter for the computer that you specified as the host computer. If you intend to connect the Bridge-File to a different computer, or plan to purchase additional Bridge-Files, refer to the following table for the adapters that apply to each model.

Computer	Adapter	Part #
PC, XT, or compatible	Omni-Bridge	2678-01
IBM PC/AT	1030-AT	2294-01
AT Compatible	Omni-Bridge	2678-01
PS/2 Model 25 or 25 286	1030-PS/2	2293-01
PS/2 Model 30 or 30 286	1030-PS/2	2293-01
PS/2 Model 50 or 50Z	1050	2295-01
PS/2 Model 55SX	1055	3390-01
PS/2 Model 60, 65, or 80	1060X	2296-65
PS/2 Model 70	1070	2297-01
PS/2 Model 90 or 95	1090	7450-01

Note

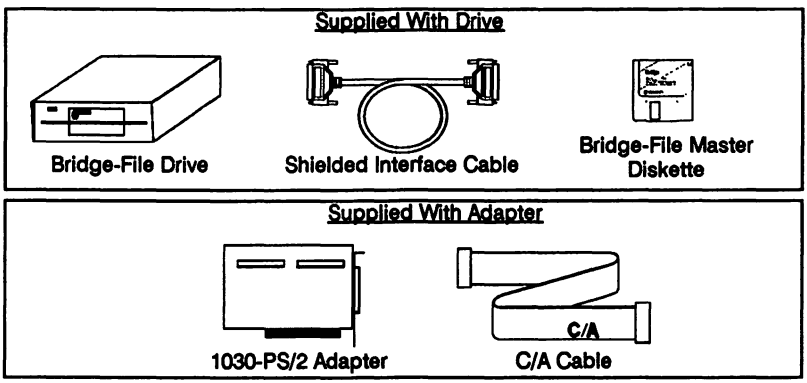
The version of the 1030 adapter designed for PC/AT use contains different signal routing from the version designed for the PS/2 Models. Do not interchange these two adapters; always use the part number that applies to your equipment.

Chapter 2

Installation PS/2 Model 25 and 25 286

Parts Inventory

Before beginning the installation, unpack and become familiar with the parts included with your Bridge-File. For the Model 25 or 25 286 installation, you should have received the following items.



You also need:

- Medium-sized, flat-blade screwdriver
- The computer's *Quick Reference* booklet

Hardware Installation

Before beginning the installation procedure, turn off power to the computer and all connected equipment. Unplug the computer's power cord from the wall outlet.

1. Remove all cables from the back of the computer and note their locations for later reassembly.

2 Place the computer on a padded surface with the screen facing down and open the computer as described in the computer's *Quick Reference*.

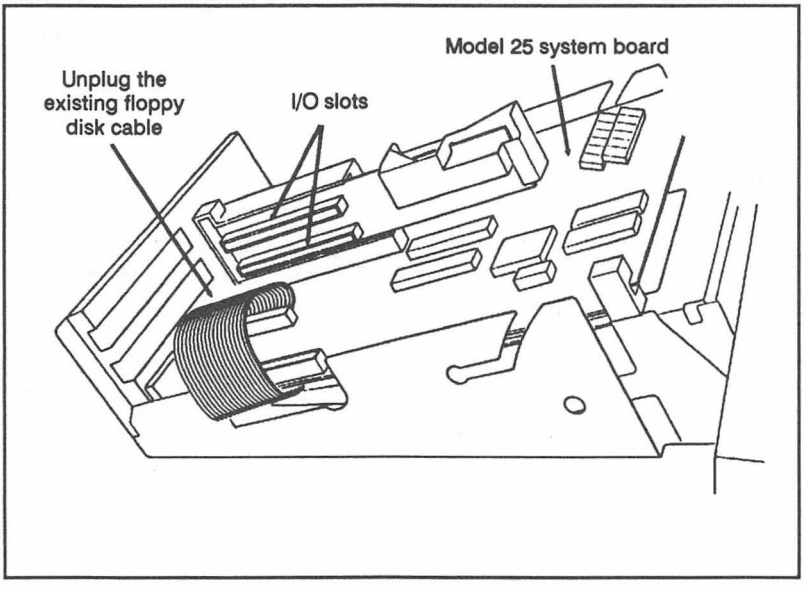


Figure 2-1. *Detaching the Interface Cable*

3. Detach the floppy disk drive interface cable from the Model 25 system board, as shown in the illustration.

4. The 1030 adapter installs most conveniently in the uppermost I/O slot. You may need to rearrange the expansion cards in your computer to free this slot for the 1030 adapter. If the slot is already unoccupied, remove the slot cover and retain the screw for reassembly.

5. Seat the 1030 adapter firmly in the open slot and reinstall the slot cover screw to secure the board in place.

6. Plug the existing floppy disk interface cable into the JAD connector on the 1030 adapter.

7. Plug the keyed end of the C/A cable into connector J12 on the system board. The key, a rectangular tab near the middle of one side of the connector, prevents the connector from being improperly attached.

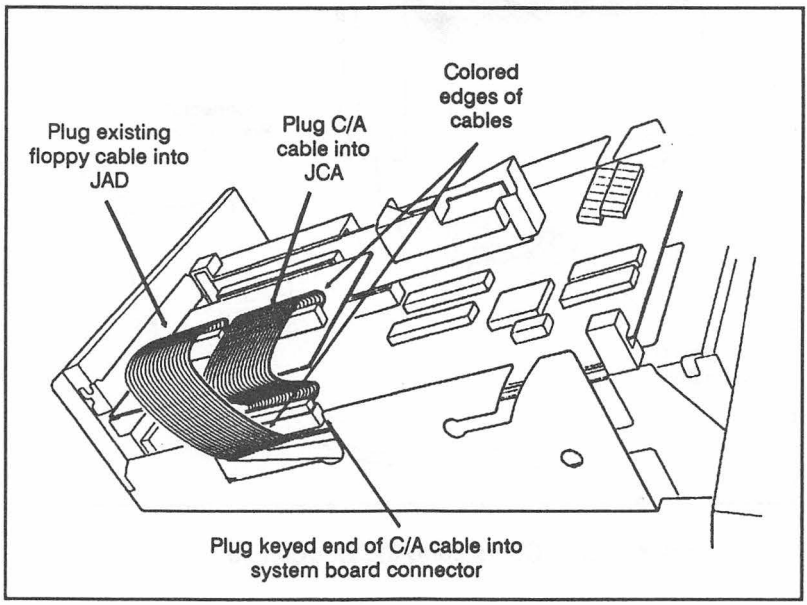

Colored edges of cables
Plug existing floppy cable into JAD
Plug C/A cable into JCA
Plug keyed end of C/A cable into system board connector

Figure 2-2. *Connecting the Cables*

8. Plug the remaining end of the C/A cable onto connector JCA on the 1030 adapter. Observe the cable orientations shown in the illustration. Tuck the loose slack in the cable underneath the 1030 adapter, clear of the sides of the computer.
9. Close the computer back up, again referring to the computer's *Quick Reference*.
10. Connect the Shielded Interface Cable to the connector on the back of the 1030 adapter. Secure the cable using the two thumbscrews.

Always make sure the computer is switched off before connecting or disconnecting the Bridge-File drive.

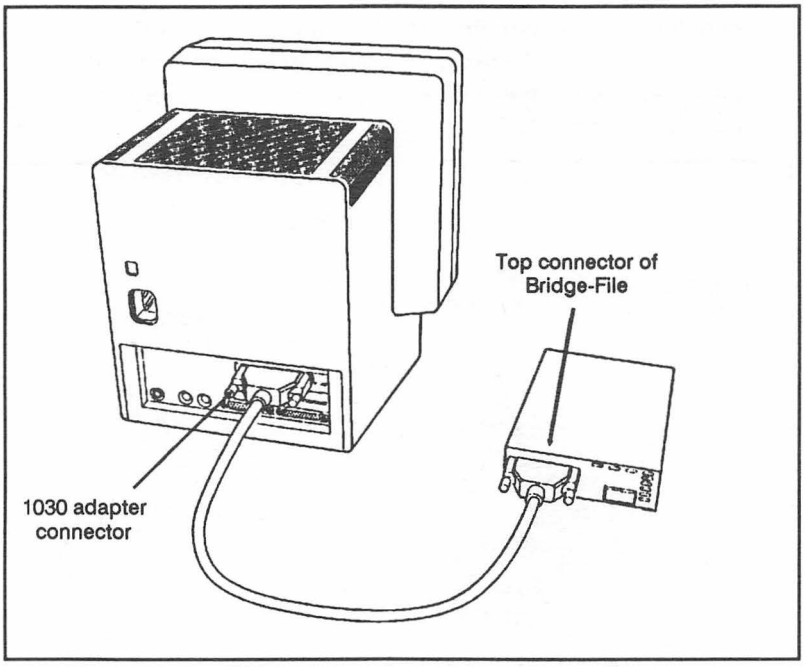


Figure 2-3. *Connecting the Bridge-File*

11. Connect the Shielded Interface Cable to the **top** 37- pin connector on the back of the Bridge-File. Secure the cable using the two thumbscrews.
12. Reconnect the power cord and all cables to the back of the system unit.
13. Remove the cardboard head protector from the Bridge-File drive. Use the head protector whenever the drive is transported or shipped.
14. Plug the computer's power cord back into the wall outlet.

Software Installation

1. Switch on and boot the computer.
2. Insert the Bridge-File master diskette into drive A: At the A> DOS prompt, type:

INSTALL <Enter>

3. The INSTALL program prompts you for information about your computer system. Answer the program's questions.

> *Note*
>
> *Before beginning the software installation, adjust both the brightness and the contrast controls on your video monitor. If these controls are not adjusted correctly, it will be difficult to read the installation screens that include text in highlighted boxes.*
>
> *If you have any problems using the INSTALL program, see the chapter in this manual titled* Software Installation *for a complete explanation of the software installation.*

4. Reboot the computer by simultaneously pressing the **<CTRL>**, **<ALT>**, and **<DEL>** keys. When it reboots, it displays a banner that includes the Bridge-File's drive letter. Use that letter to access the Bridge-File drive.

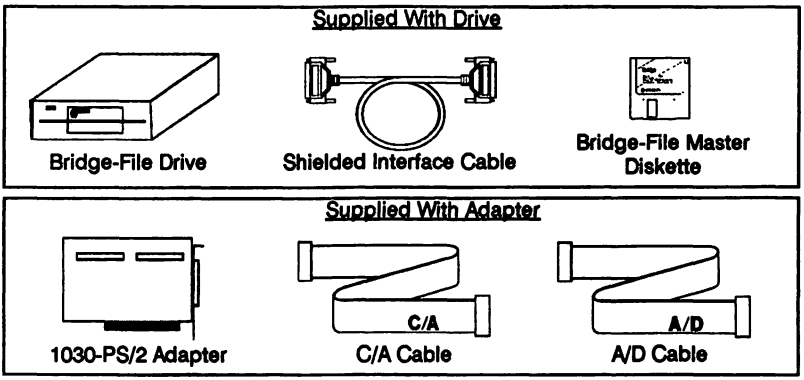
This completes the installation of the Bridge-File for the PS/2 Model 25 or 25 286.

Chapter 3

Installation PS/2 Model 30 and 30 286

Parts Inventory

Before beginning the installation, unpack and become familiar with the parts included with your Bridge-File. For the Model 30 or Model 30 286 installation, you should have received the following items.



You also need:

- Medium-sized, flat-blade screwdriver
- The computer's *Quick Reference* booklet

Installation Instructions for the Model 30

Before beginning the installation procedure, turn off power to the computer and all connected equipment. Unplug the computer's power cord from the wall outlet.

1. Remove all cables from the back of the computer and note their locations for later reassembly.
2 Remove the computer's cover as described in the computer's *Quick Reference.*

> *Note*
> *Two separate sets of instructions follow for inserting the adapter into the Model 30 or Model 30 286. Use the instructions that refer to your model computer.*

Inserting the Adapter into Model 30

1. The 1030 adapter must be installed in one of the two uppermost I/O slots. You may need to rearrange the expansion cards in your computer to free one of these slots for the 1030 adapter. If one of these slots is unoccupied, remove the screw securing its slot cover.
2. Seat the 1030 adapter firmly in the open slot and reinstall the slot cover screw.
3. Unplug the female connector of the floppy disk interface cable from the J12 connector on the system board.
4. Plug the male end of the A/D cable (the end with the pins extended) into the floppy disk interface cable that you just unplugged.
5. Plug the remaining end of the A/D cable onto connector JAD on the 1030 adapter. Pin 1 of the cable should correspond with the Pin 1 marking on the board.
6. Plug the keyed end of the C/A cable into connector J12 on the system board. The key, a rectangular tab near the middle of one side of the connector, prevents the connector from being improperly attached.
7. Plug the remaining end of the C/A cable onto connector JCA on the 1030 adapter. Observe Pin 1 markings on both the cable and the board.

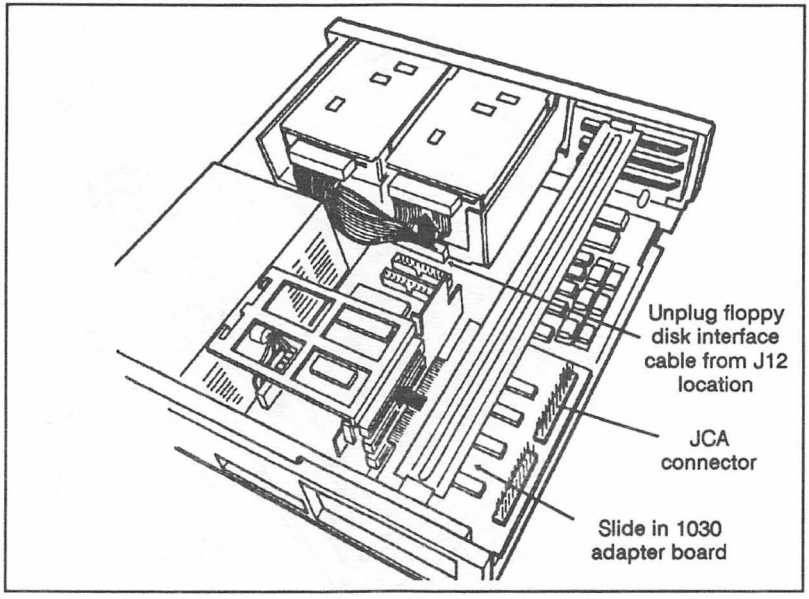


Figure 3-1. *Inserting the 1030 Adapter in Model 30*

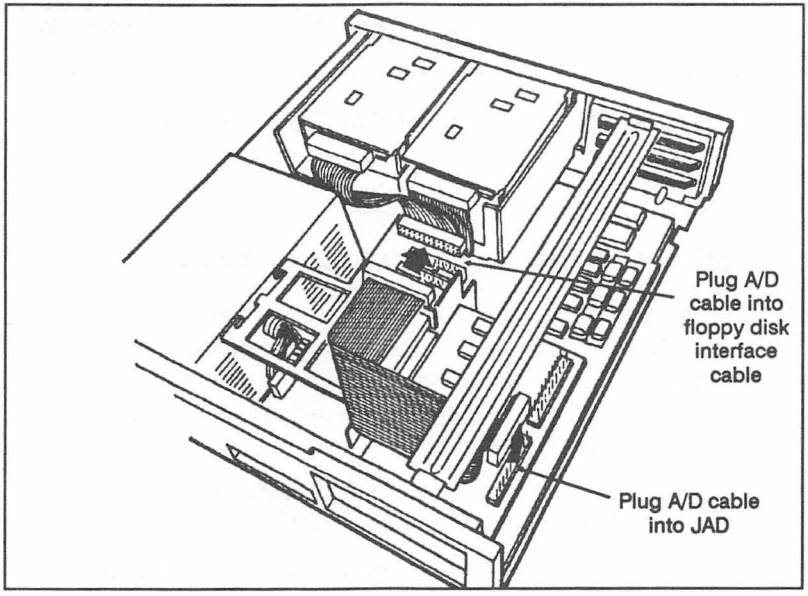


Figure 3-2. *Connecting the Cables in Model 30*

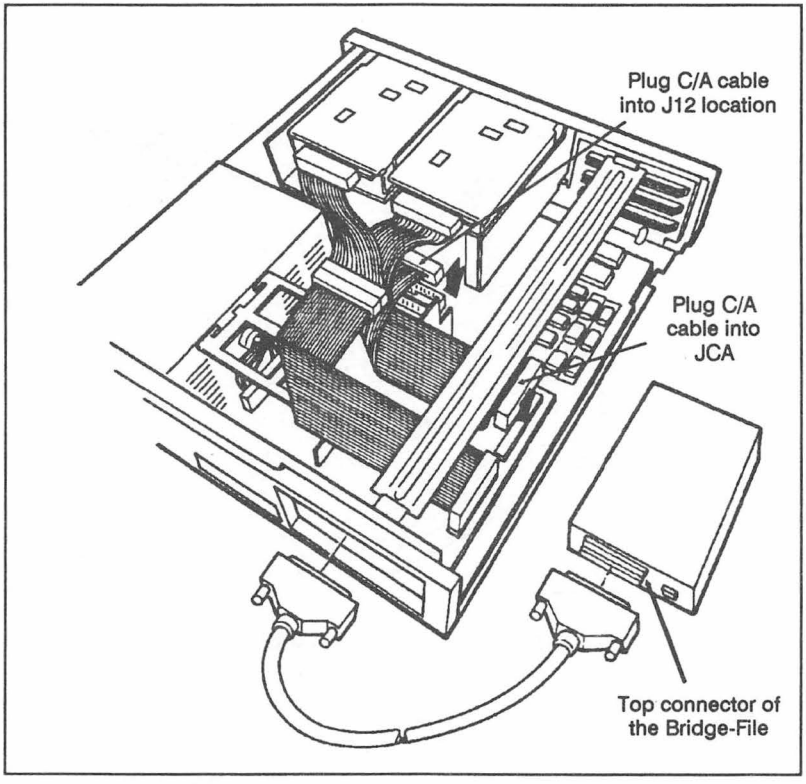


Figure 3-3. *Attaching the C/A Cable in Model 30*

Inserting the Adapter into Model 30 286

1. The 1030 adapter must be installed in one of the two uppermost I/O slots. You may need to rearrange the expansion cards in your computer to free one of these slots for the 1030 adapter. If one of these slots is unoccupied, remove the screw securing its slot cover.
2. Unplug the female connector of the floppy disk interface cable from the J12 connector on the system board.
3. Seat the 1030 adapter firmly in the open slot and reinstall the slot cover screw.

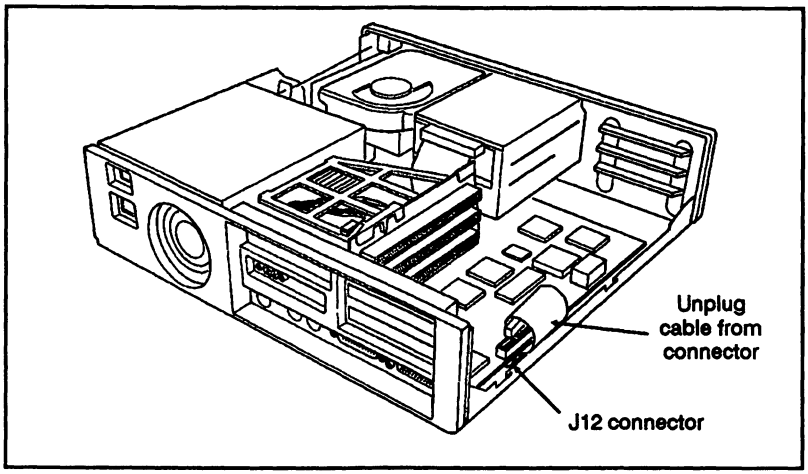


Figure 3-4. *J12 Connector in Model 30 286*

4. Plug the male end of the A/D cable into the floppy disk interface cable that you just unplugged.
5. Plug the remaining end of the A/D cable onto connector JAD on the 1030 adapter. Pin 1 of the cable should correspond with the Pin 1 marking on the board.

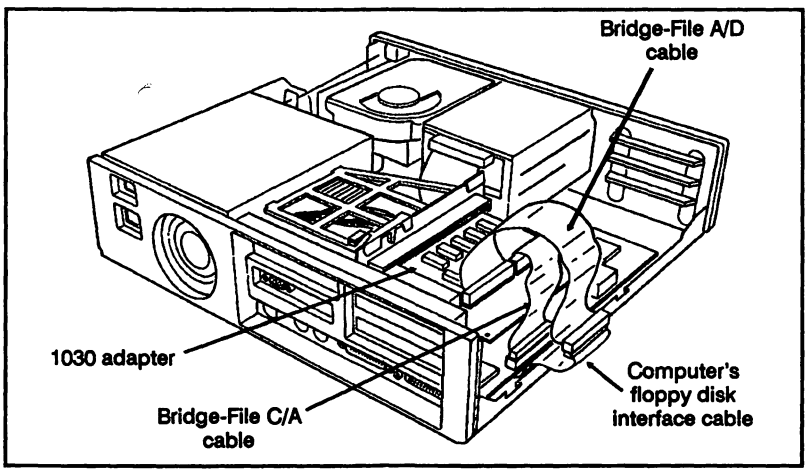


Figure 3-5. *Connecting the Cables in Model 30 286*

6. Plug the keyed end of the C/A cable into connector J12 on the system board. The key, a rectangular tab near the middle of one side of the connector, prevents the connector from being improperly attached.
7. Plug the remaining end of the C/A cable onto connector JCA on the 1030 adapter. Observe Pin 1 markings on both the cable and the board.

Completing the Installation

1. Replace the cover of the system unit. Secure the cover with the four screws on the sides of the system unit.
2. Connect the Shielded Interface Cable to the connector on the back of the 1030 adapter (see Figure 3-3). Secure the cable using the two thumbscrews.
3. Connect the Shielded Interface Cable to the top 37- pin connector on the back of the Bridge-File. Secure the cable using the two thumbscrews.

Always make sure the computer is switched off before connecting or disconnecting the Bridge-File drive.

4. Reconnect the power cord and all cables to the back of the system unit.
5. Remove the cardboard head protector from the Bridge-File drive. Use the head protector whenever the drive is transported or shipped.
6. Plug the computer's power cord back into the wall outlet.

Software Installation

1. Switch on and boot the computer.
2. Insert the Bridge-File master diskette into drive A: At the A> DOS prompt, type:

   INSTALL <Enter>

3. The INSTALL program prompts you for information about your computer system. Answer the program's questions.

> *Note*
>
> *Before beginning the software installation, adjust both the brightness and the contrast controls on your video monitor. If these controls are not adjusted correctly, it will be difficult to read the installation screens that include text in highlighted boxes.*
>
> *If you have any problems using the INSTALL program, see the chapter in this manual titled* Software Installation *for a complete explanation of the software installation.*

4. Reboot the computer by simultaneously pressing the **<CTRL>**, **<ALT>**, and **<DEL>** keys. When it reboots, it displays a banner that includes the Bridge-File's drive letter. Use that letter to access the Bridge-File drive.

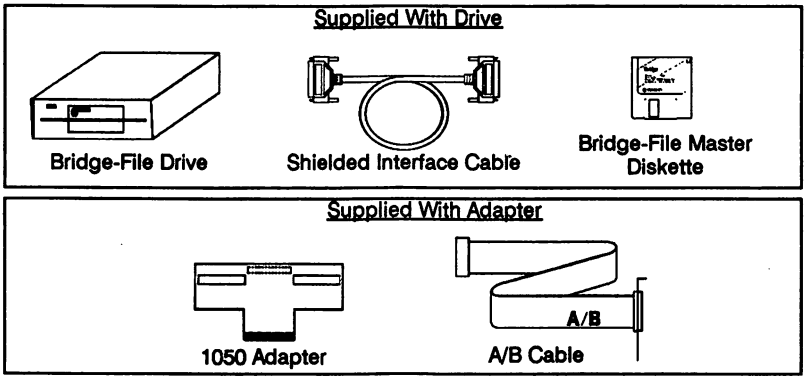
This completes the installation of the Bridge-File for the PS/2 Model 30 and 30 286.

Chapter 4

Installation PS/2 Model 50 and 50Z

Parts Inventory

Before beginning the installation, unpack and become familiar with the parts included with your Bridge-File. For the Model 50 installation, you should have received the following items.



You also need:

- The computer's *Quick Reference* booklet

Installation Instructions for Model 50, 50Z

Before beginning the installation procedure, turn off power to the computer and all connected equipment. Unplug the power cord for the computer from the wall outlet.

1. Remove all cables from the back of the computer and note their locations for later reassembly.

2. Remove the computer's cover as described in the computer's *Quick Reference.*
3. Remove the 3.5-inch diskette drive(s) from the system unit. Each drive is secured by a plastic tab located just beneath the front of the drive. Press the tab upward and slide the drive forward to remove it from the system unit.

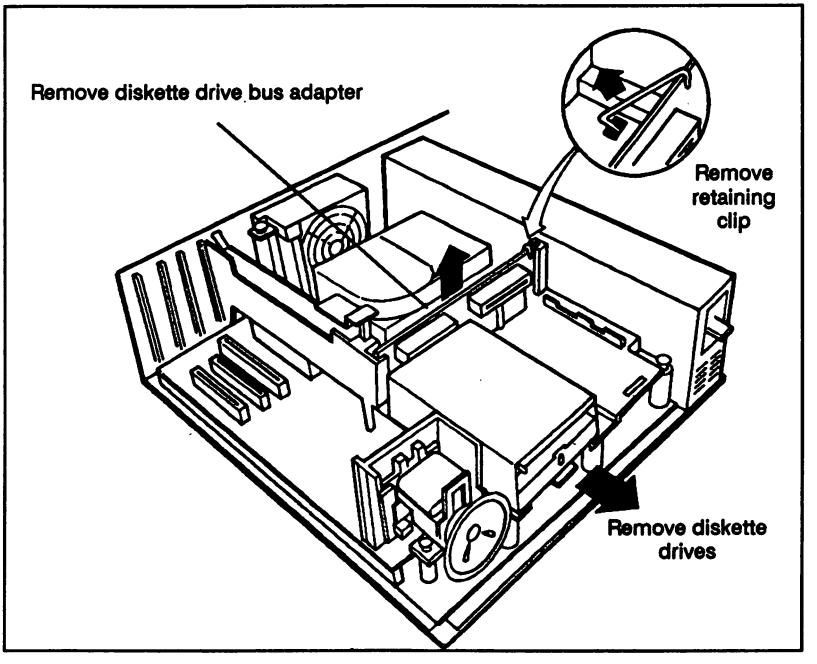


Figure 4-1. *Removing the Drives*

4. Remove the retaining clip from the right side of the Diskette Drive Bus Adapter. Unhook the bottom of the clip from the system unit by sliding it towards the back of the unit. Store the clip in a safe place until reassembly.
5. Plug the 40-position socket connector of the A/B cable onto connector H1 on the back of the 1050 adapter. Pin 1 of the cable must match the Pin 1 marking on the adapter.

6. Replace the IBM Diskette Drive Bus Adapter with the 1050 adapter. Pull the Diskette Drive Bus Adapter straight up to remove it. Slide the 1050 adapter into the space vacated by the Diskette Drive Bus Adapter. Make sure that the 1050 adapter is firmly seated in the system unit and that the two card-edge connectors face the front of the system unit.

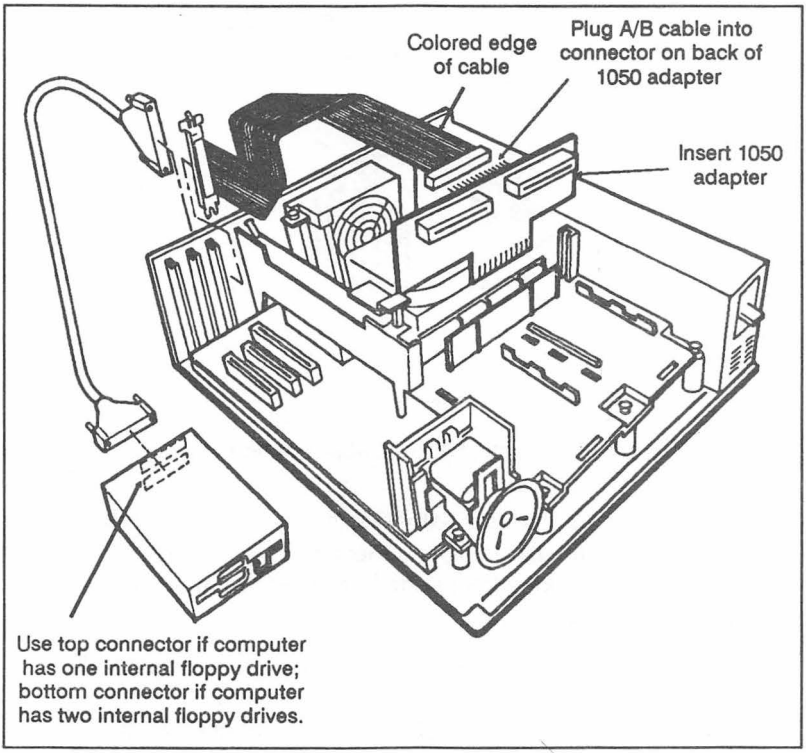

Colored edge of cable
Plug A/B cable into connector on back of 1050 adapter
Insert 1050 adapter
Use top connector if computer has one internal floppy drive; bottom connector if computer has two internal floppy drives.

Figure 4-2. *Plugging in the Connectors*

7. Keep the original Diskette Drive Bus Adapter in a safe place in case you ever want to restore your system to its original configuration.

8. Reinstall the retaining clip removed earlier.

9. Secure the bracket end of the A/B cable at the back of the system unit. The bracket on the cable replaces the expansion slot cover of any unused Micro Channel I/O slot. The expansion slot covers are secured by thumbscrews on the back of the system unit.

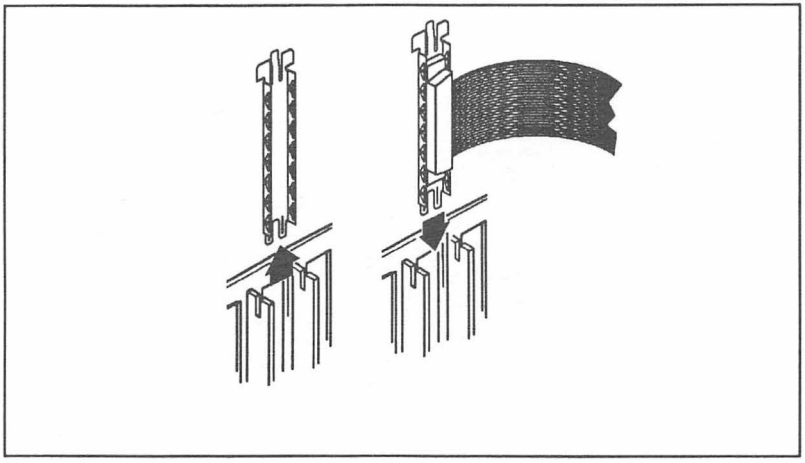


Figure 4-3. *Securing the Cable Bracket*

10. Reinstall the diskette drive(s) inside the system unit. Make sure that both the card edge connector at the back of the drive and the locking tab on the bottom of the drive are properly engaged.
11. Replace the cover of the system unit. Secure the cover with the two thumbscrews on the back of the system unit. For added security, you may wish to lock the cover down at this time.
12. Connect either end of the Shielded Interface Cable to the connector of the bracket you just secured. The cable is secured by two thumbscrews.
13. Connect and secure the Shielded Interface Cable to the appropriate Bridge-File connector, as described in the following paragraph.

    If there are already two internal diskette drives in the computer, connect the Shielded Interface Cable to the bottom Bridge-File connector. If there is one internal diskette drive in the computer,

connect the Shielded Interface Cable to the top Bridge-File connector.

Always make sure the computer is switched off before connecting or disconnecting the Bridge-File drive.

14. Reconnect the power cord and all cables to the back of the system unit.
15. Remove the cardboard head protector from the Bridge-File drive. Use the head protector whenever the drive is transported or shipped.
16. Plug the computer's power cord back into the wall outlet.

Reconfiguring the System

1. Insert your working copy of the computer's Reference Diskette into drive A: and switch on the computer.

   If the computer has only one internal floppy drive, it should display the following error code when it boots:

   Error 162 Drive type mismatch

   If the computer has two internal floppy drives, it should not display the "Error 162" message when it boots.

   If the computer has one internal floppy drive and did not display the "Error 162" message, or if it has two internal floppy drives and did display the message, you may have a problem with your installation. Continue with the installation, and see the *Problem Solving Guide* near the back of this manual if the Bridge-File does not work properly.

2. If the Error 162 message was displayed, bypass it by pressing the **<F1>** key. The computer will then load the reference diskette and ask:

   Automatically configure the system?

   Answer Y to continue. The computer auto-configures and then reboots. Remove the Reference Diskette to boot from the hard disk.

> *Note*
>
> *After automatic configuration, the B: diskette drive type may be listed on the Set Configuration menu as 1.44 Mbyte 3.5-inch. If so, this is the proper setting, though it might not match the actual size or capacity of the Bridge-File drive.*

Software Installation

1. Insert the Bridge-File master diskette into drive A: At the A> DOS prompt, type:

   INSTALL <Enter>

2. The INSTALL program prompts you for information about your computer system. Answer the program's questions.

> *Note*
>
> *Before beginning the software installation, adjust both the brightness and the contrast controls on your video monitor. If these controls are not adjusted correctly, it will be difficult to read the installation screens that include text in highlighted boxes.*
>
> *If you have any problems using the INSTALL program, see the chapter in this manual titled* Software Installation *for a complete explanation of the software installation.*

3. Reboot the computer by simultaneously pressing the **<CTRL>**, **<ALT>**, and **<DEL>** keys. When it reboots, it displays a banner that includes the Bridge-File's drive letter. Use that letter to access the Bridge-File drive.

This completes the installation of the Bridge-File for the PS/2 Model 50 or 50Z.

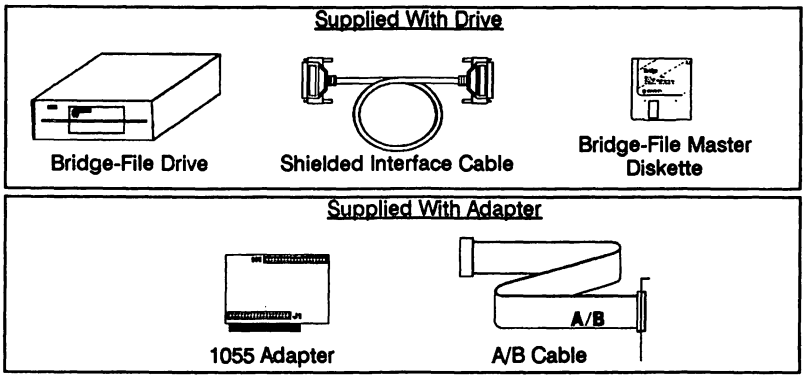
> *Note*
>
> *If your computer has only one internal floppy drive and you don't want the Bridge-File to be assigned drive letter B:, see the section titled* Non-B: Bridge-File for PS/2 Computers *near the end of the* Software Installation *chapter.*

Chapter 5

Installation PS/2 Model 55

Parts Inventory

Before beginning the installation, unpack and become familiar with the parts included with your Bridge-File. For the Model 55 installation, you should have received the following items.



You also need:

- Medium-sized, flat-blade screwdriver
- The computer's *Quick Reference* booklet

Installation Instructions for the Model 55

Before beginning the installation procedure, turn off power to the computer and all connected equipment. Unplug the computer's power cord from the wall outlet.

1. Remove all cables from the back of the system unit and note their locations for later reassembly.
2. Remove the computer's cover as described in the computer's *Quick Reference* booklet.
3. Remove the plastic bezel covering the front of the diskette drive by inserting a dime at the upper edge of the bezel, and lifting it gently, first on the left side and then on the right.

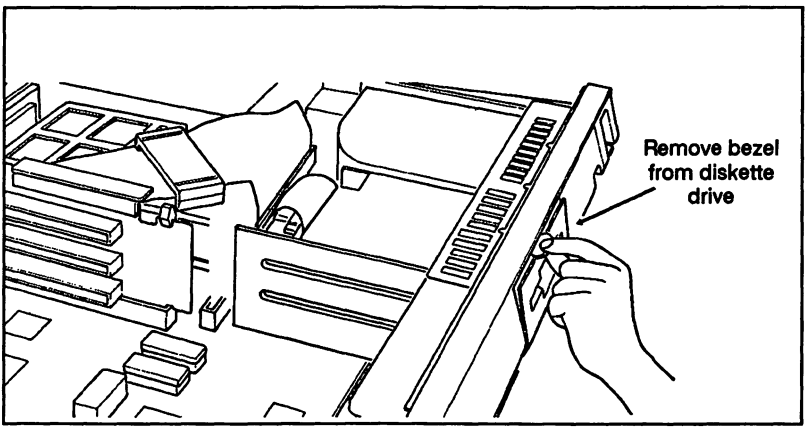


Figure 5-1. *Removing the Plastic Bezel*

4. Lift the plastic tab under the front of the diskette drive and slide the drive forward in its bay about two or three inches.
5. Disconnect the diskette drive's ribbon cable from the system board connector, leaving the other end still connected to the back of the drive.
6. Attach the non-bracketed end of the 1055 adapter's A/B cable to the top connector (H1) of the 1055 adapter so that the colored edge of the cable is nearest the right edge of the adapter (this step may already have been performed at the factory).
7. Connect the loose end of the diskette drive cable to the lower gold-pin connector on the 1055 adapter (J1). The colored edge of the cable must match the Pin 1 marking or sticker on the 1055 adapter.

The side of the diskette drive cable closest to the hard drive should align with Pin 1 on J1. Be sure to get the cable properly aligned.

8. Gently slip the 1055 adapter behind the diskette drive (in front of the flexible cable) and plug its bottom connector (P1) into the system board where the diskette drive's ribbon cable used to be (connector J8). Make sure that the adapter is securely seated in the connector.

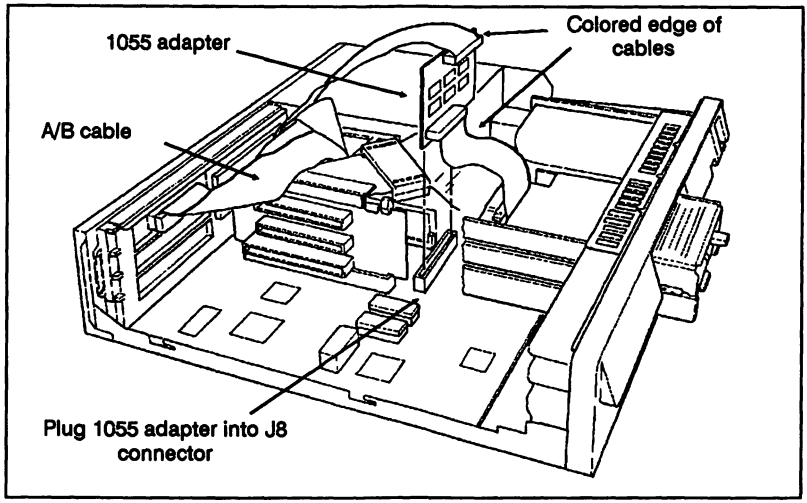


Figure 5-2. *Inserting the 1055 Adapter*

Note

The 1055 adapter has a 44-position connector to fit the Model 55's 40-pin header. The extra 4 positions help to center the connector.

9. Route the A/B cable to the back panel of the computer, as shown in the illustration, folding the cable neatly so that the cover can be easily reinstalled. Thread any excess cable down behind the black plastic support bracket.

10. Remove one of the plastic inserts from the rear of the system unit, at the position where you want to connect the Bridge-File.

11. Loosen the thumbscrew beside the selected slot by turning counterclockwise. Slide the metal expansion slot cover free from the slot.
12. Slide the bracketed end of the A/B cable into the unoccupied slot.
13. Tighten the thumbscrew to secure the bracket.
14. Slide the existing diskette drive back into the drive bay, and reinstall the plastic bezel.
15. Replace the computer cover and tighten the three screws to secure it in place.
16. Reconnect the power cord and any equipment that was disconnected during the installation procedure.
17. Locate the shielded interface cable included with your Bridge-File, and connect one end to the bracket (that you previously installed) on the rear panel of the system unit.
18. Connect the Shielded Interface Cable to the top 37- pin connector on the back of the Bridge-File. Secure the cable using the two thumbscrews.

Always make sure the computer is switched off before connecting or disconnecting the Bridge-File drive.

19. Remove the cardboard head protector from the Bridge-File drive. Use the head protector whenever the drive is transported or shipped.
20. Plug the computer's power cord back into the wall outlet.

Reconfiguring the System

1. Insert your working copy of the computer's Reference Diskette into drive A: and switch on the computer. When the computer boots, it displays the error message :

   Error 162 Drive type mismatch

   or a similar message. This indicates that the computer has detected the Bridge-File but is not configured to use it.

> *Note*
> *A few early Model 55 computers would not recognize that a second diskette drive was attached. On these systems, no Error 162 is generated when attaching the Bridge-File.*

2. If an "Error 162" message was generated, bypass it by pressing the **<F1>** key. The computer will then load the reference diskette and ask:

   Automatically configure the system?

   Answer Y to continue. The computer auto-configures and then reboots. Remove the Reference Diskette to boot from the hard disk.

> *Note*
> *After automatic configuration, the B: diskette drive type may be listed on the Set Configuration menu as 1.44 Mbyte 3.5-inch. If so, this is the proper setting, though it might not match the actual size or capacity of the Bridge-File drive.*

Software Installation

1. Insert the Bridge-File master diskette into drive A: At the A> DOS prompt, type:

   INSTALL <Enter>

2. The INSTALL program prompts you for information about your computer system. Answer the program's questions.

> *Note*
> *Before beginning the software installation, adjust both the brightness and the contrast controls on your video monitor. If these controls are not adjusted correctly, it will be difficult to read the installation screens that include text in highlighted boxes.*
>
> *If you have any problems using the INSTALL program, see the chapter in this manual titled* Software Installation *for a complete explanation of the software installation.*

3. Reboot the computer by simultaneously pressing the **<CTRL>**, **<ALT>**, and **<DEL>** keys. When it reboots, it displays a banner that includes the Bridge-File's drive letter. Use that letter to access the Bridge-File drive.

This completes the installation of the Bridge-File for the PS/2 Model 55.

Note

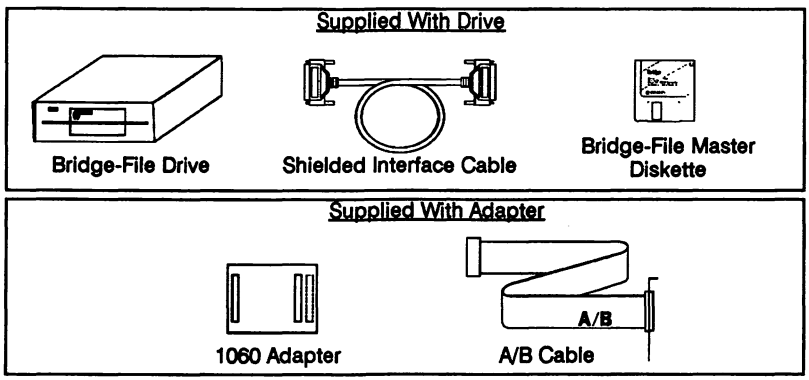
If your computer has only one internal floppy drive and you don't want the Bridge-File to be assigned drive letter B:, see the section titled Non-B: Bridge-File for PS/2 Computers *near the end of the* Software Installation *chapter.*

Chapter 6

Installation PS/2 Model 60, 65, and 80

Parts Inventory

Before beginning the installation, unpack and become familiar with the parts included with your Bridge-File. For the Model 60, 65, or 80 installation, you should have received the following items



You also need:

- The computer's *Quick Reference* booklet

Installation Instructions for Model 60, 65 or 80

Before beginning the installation procedure, turn off power to the computer and all connected equipment. Unplug the computer's power cord from the wall outlet.

1. Remove all cables from the back of the system unit and note their locations for later reassembly.

2. Remove the computer's cover as described in the computer's *Quick Reference* booklet.

3. Unplug the floppy disk interface cable from its connector on the system board of the system unit (J1). Note the orientation of Pin 1 on this connector. Pin 1 is identified by the colored edge of the cable.

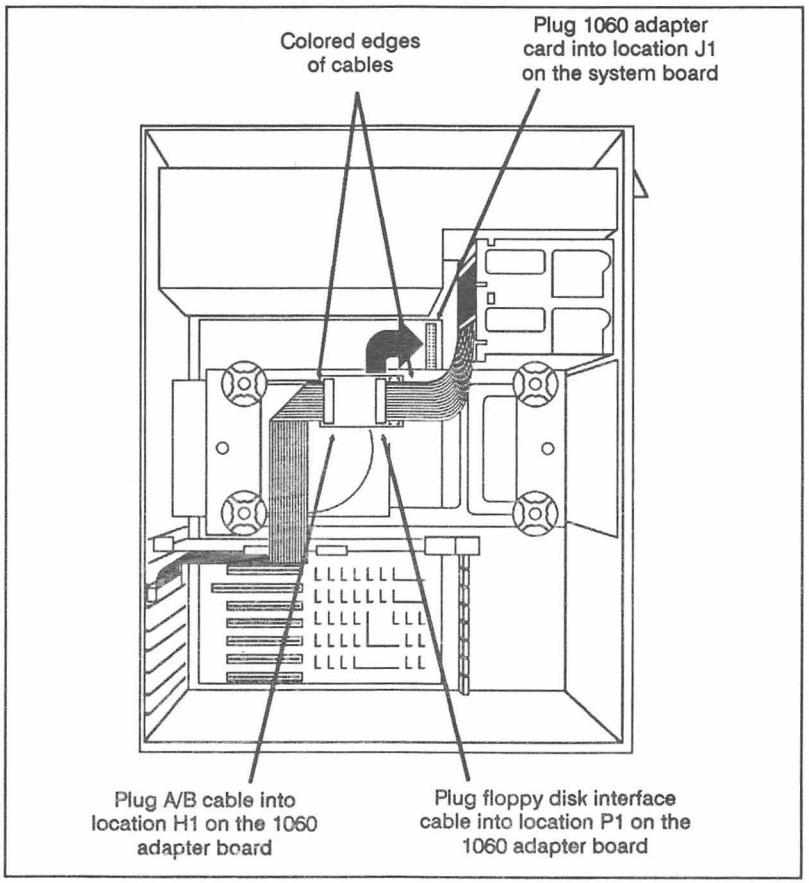

Colored edges of cables
Plug 1060 adapter card into location J1 on the system board
Plug A/B cable into location H1 on the 1060 adapter board
Plug floppy disk interface cable into location P1 on the 1060 adapter board

Figure 6-1. *Inserting the 1060 Adapter*

4. Plug the 40-position socket connector of the A/B cable into connector H1 on the 1060 adapter. Orient Pin 1 of the A/B cable so that it corresponds with the Pin 1 marking on the adapter.

5. Plug the computer's floppy disk interface cable into connector P1 on the 1060 adapter. Pin 1 of the interface cable should correspond with the Pin 1 marking on the adapter.
6. Plug the 1060 adapter into connector J1 on the system board. Make sure that the board is fully seated in the connector and that none of the pins on the connector are bent.

> *Note*
> *The 1060 adapter has a 44-position connector to fit the computer's 40-pin header at location J1. The extra 4 positions help to center the connector.*

7. Secure the bracket end of the A/B cable at the back of the computer. The bracket on the cable replaces the expansion slot cover of any unused Micro Channel I/O slot. The expansion slot covers are secured by thumbscrews on the back of the computer.

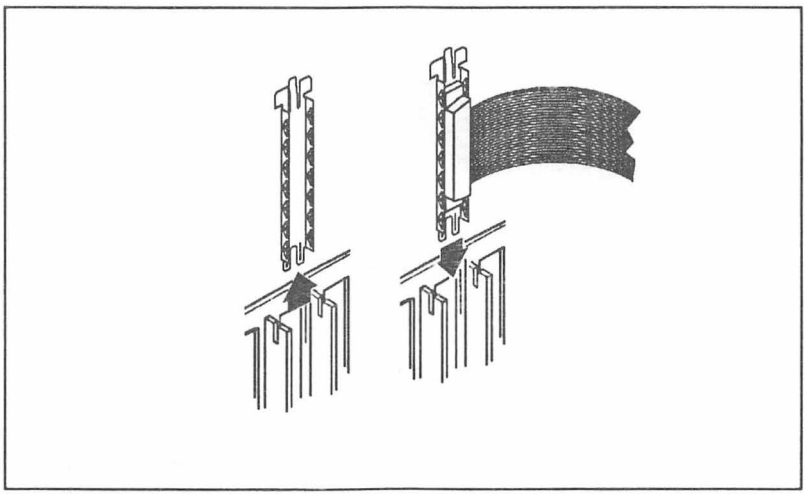


Figure 6-2. *Securing the Cable Bracket*

8. Reinstall the computer's cover.
9. Secure the cover with the two large screws on the system unit cover. For added security, you can lock the cover down at this time.

10. Connect either end of the Shielded Interface Cable to the connector on the back of the 1060 adapter. Secure the cable using the two thumbscrews.

11. Connect and secure the Shielded Interface Cable to the appropriate Bridge-File connector, as described in the following paragraph.

    If there are already two internal diskette drives in the computer, connect the Shielded Interface Cable to the bottom Bridge-File connector. If there is one internal diskette drive in the computer, connect the Shielded Interface Cable to the top Bridge-File connector.

Always make sure the computer is switched off before connecting or disconnecting the Bridge-File drive.

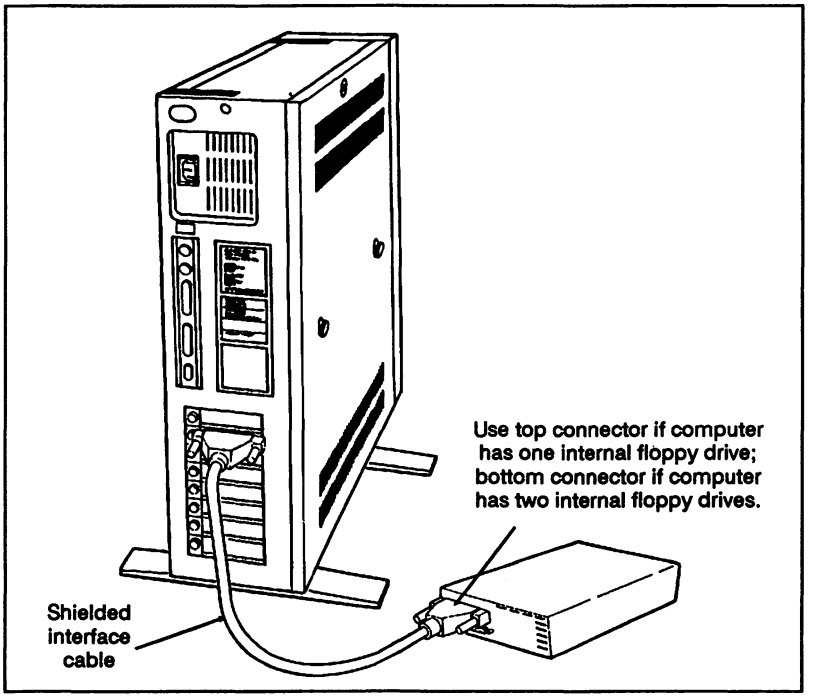

Use top connector if computer has one internal floppy drive; bottom connector if computer has two internal floppy drives.
Shielded interface cable

Figure 6-3. *Connecting the Drive*

12. Reconnect the power cord and all cables to the back of the computer.
13. Remove the cardboard head protector from the Bridge-File drive. Use the head protector whenever the Bridge-File is being transported or shipped.
14. Plug the computer's power cord back into the wall outlet.

Reconfiguring the System

1. Insert your working copy of the computer's Reference Diskette into drive A: and switch on the computer.

   If the computer has only one internal floppy drive, it should display the following error code when it boots:

   Error 162 Drive type mismatch

   If the computer has two internal floppy drives, it should not display the "Error 162" message when it boots.

   If the computer has one internal floppy drive and did not display the "Error 162" message, or if it has two internal floppy drives and did display the message, you may have a problem with your installation. Continue with the installation, and see the *Problem Solving Guide* near the back of this manual if the Bridge-File does not work properly.

2. If the Error 162 message was displayed, bypass it by pressing the **<F1>** key. The computer will then load the reference diskette and ask:

   Automatically configure the system?

   Answer Y to continue. The computer auto-configures and then reboots. Remove the Reference Diskette to boot from the hard disk.

> *Note*
> *After automatic configuration, the B: diskette drive type may be listed on the Set Configuration menu as 1.44 Mbyte 3.5-inch. If so, this is the proper setting, though it might not match the actual size or capacity of the Bridge-File drive.*

Software Installation

1. Insert the Bridge-File master diskette into drive A: At the A> DOS prompt, type:

   INSTALL <Enter>

2. The INSTALL program prompts you for information about your computer system. Answer the program's questions.

> *Note*
>
> *Before beginning the software installation, adjust both the brightness and the contrast controls on your video monitor. If these controls are not adjusted correctly, it will be difficult to read some of the installation screens.*
>
> *If you have any problems using the INSTALL program, see the chapter in this manual titled* Software Installation for a complete explanation of the software installation.

3. Reboot the computer by simultaneously pressing the **<CTRL>**, **<ALT>**, and **<DEL>** keys. When it reboots, it displays a banner that includes the Bridge-File's drive letter. Use that letter to access the Bridge-File drive.

   This completes the installation of the Bridge-File for the PS/2 Model 60, 65, or 80.

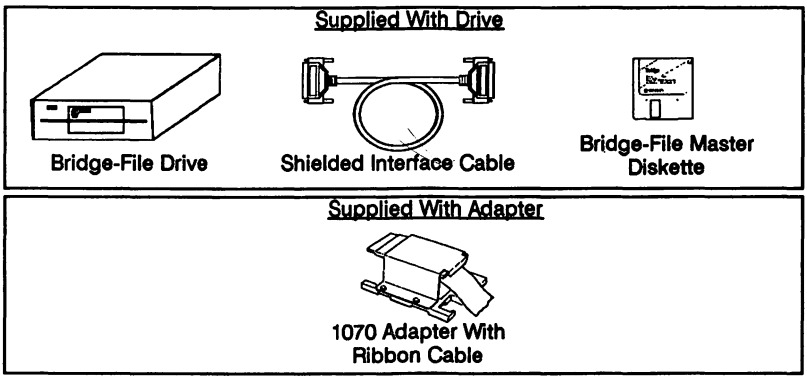
> *Note*
>
> *If your computer has only one internal floppy drive and you don't want the Bridge-File to be assigned drive letter B:, see the section titled* Non-B: Bridge-File for PS/2 Computers *near the end of the* Software Installation *chapter.*

Chapter 7

Installation PS/2 Model 70

Parts Inventory

Before beginning the installation, unpack and become familiar with the parts included with your Bridge-File. For the Model 70 installation, you should have received the following items.



You also need:

- The computer's *Quick Reference* booklet

Installation Instructions for the Model 70

Before beginning the installation procedure, turn off power to the computer and all connected equipment. Unplug the power cord for the computer from the wall outlet.

1. Remove all cables from the back of the system unit and note their locations for later reassembly.

2. Remove the computer's cover as described in the computer's *Quick Reference* booklet.

3. If you have two internal disk drives installed in the system unit, remove the second diskette drive. Refer to the *Model 70 Quick Reference* manual or the *Guide to Operations* for instructions on how to remove the diskette drive. Store this drive in a safe location in case you later want to restore your system to its original configuration.

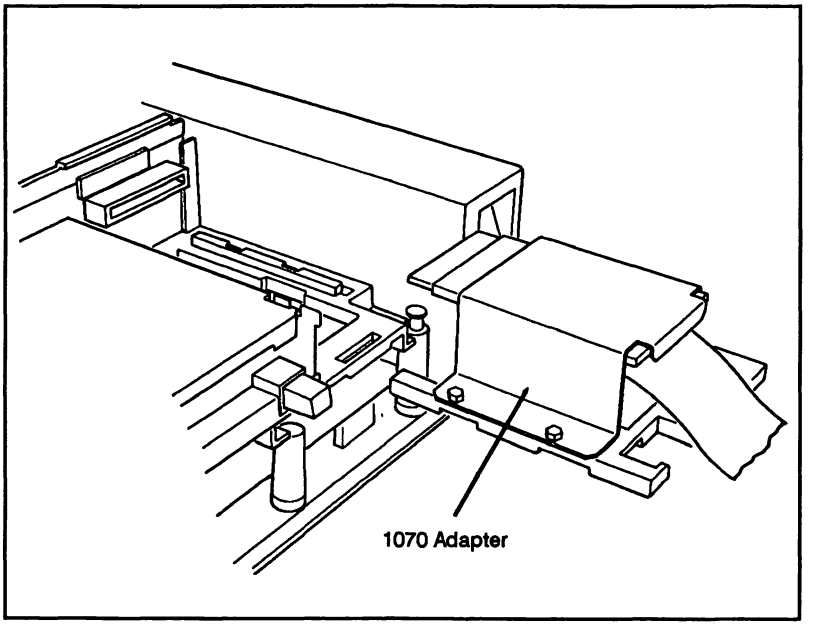


Figure 7-1. *Installing the Adapter*

4. Slide the 1070 adapter into the second diskette drive slot. Press the 1070 adapter into the slot until it latches into place. Make sure that the edge connector of the adapter engages fully with the connector at the back of the diskette drive slot.

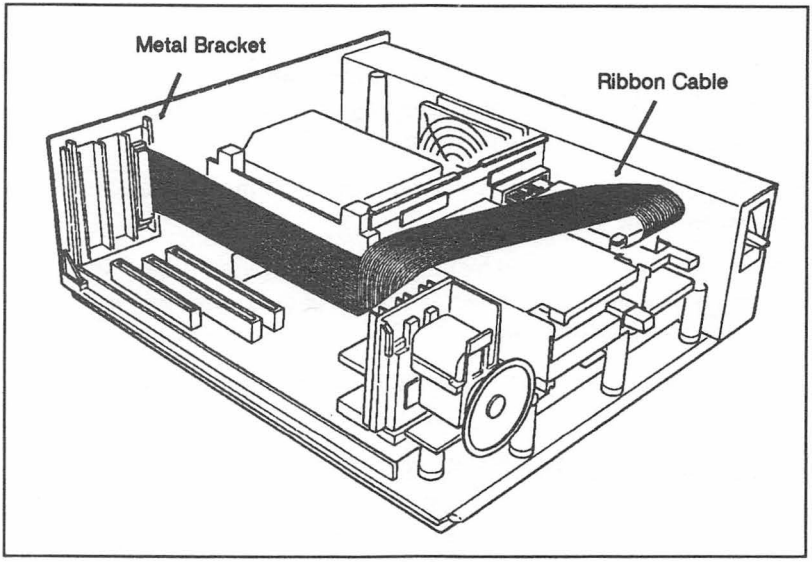


Figure 7-2. *Securing the Bracket*

5. Secure the bracket end of the 1070 adapter's ribbon cable in the back of the system unit. The bracket on the ribbon cable replaces the expansion slot cover of any unused slot in the system expansion bus, but to avoid interference with other installed boards, install the bracket in the slot nearest to the system fan. The covers to the expansion slots are secured by thumbscrews on the outside of the system unit.
6. Replace the cover of the system unit of your computer. Refer to the *Quick Reference* that came with your computer for instructions on how to install the cover.
7. Connect the Shielded Interface Cable to the 37-position D-shell connector on the bracket that was installed previously. Secure the cable with the two thumbscrews on the cable connector.
8. Connect the Shielded Interface Cable to the top 37-pin connector on the back of the Bridge-File. Secure the cable with the two thumbscrews on the cable connector.

Always make sure the computer is switched off before connecting or disconnecting the Bridge-File drive.

9. Reconnect the power cord and all cables to the back of the system unit.
10. Remove the cardboard head protector from the Bridge-File drive. Use the head protector whenever the Bridge-File is transported or shipped.
11. Plug the computer's power cord back into the wall outlet.

Reconfiguring the System

1. Insert your working copy of the computer's Reference Diskette into drive A: and switch on the computer. When the computer boots, it displays the error message :

   Error 162 Drive type mismatch

   or something similar. This indicates that the computer has detected the Bridge-File but is not configured to use it.

2. Bypass the error message by pressing the **<F1>** key. The computer will then load the reference diskette and ask:

   Automatically configure the system?

   Answer Y to continue. The computer auto-configures and then reboots. Remove the Reference Diskette to boot from the hard disk.

> *Note*
> *After automatic configuration, the B: diskette drive type may be listed on the Set Configuration menu as 1.44 Mbyte 3.5-inch. If so, this is the proper setting, though it might not match the actual size or capacity of the Bridge-File drive.*

Software Installation

1. Insert the Bridge-File master diskette into drive A: At the A> DOS prompt, type:

INSTALL <Enter>

2. The INSTALL program prompts you for information about your computer system. Answer the program's questions.

> *Note*
>
> *Before beginning the software installation, adjust both the brightness and the contrast controls on your video monitor. If these controls are not adjusted correctly, it will be difficult to read the installation screens that include text in highlighted boxes.*
>
> *If you have any problems using the INSTALL program, see the chapter in this manual titled* Software Installation for a complete explanation of the software installation.

3. Reboot the computer by simultaneously pressing the **<CTRL>**, **<ALT>**, and **<DEL>** keys. When it reboots, it displays a banner that includes the Bridge-File's drive letter. Use that letter to access the Bridge-File drive.

This completes the installation of the Bridge-File for the PS/2 Model 70.

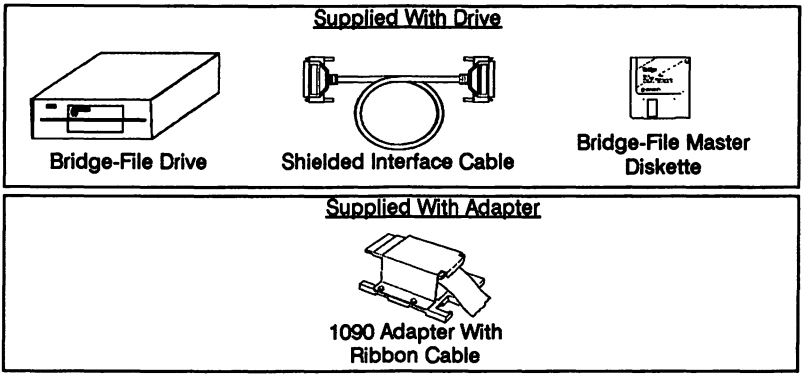
> *Note*
>
> *If your computer has only one internal floppy drive and you don't want the Bridge-File to be assigned drive letter B:, see the section titled* Non-B: Bridge-File for PS/2 Computers *near the end of the* Software Installation *chapter.*

Chapter 8

Installation PS/2 Model 90 and 95

Parts Inventory

Before beginning the installation, unpack and become familiar with the parts included with your Bridge-File. For the Model 90 or 95 installation, you should have received the following items.



You also need:

- Medium-sized, flat-blade screwdriver
- The computer's *Quick Reference* booklet

Installation Instructions for the Model 90 or 95

Before beginning the installation procedure, turn off power to the computer and all connected equipment. Unplug the power cord for the computer from the wall outlet.

The procedures that follow explain how to install the Bridge-File on the IBM PS/2 Model 90 and 95 computers.

Checking the Jumper Settings

A jumper on the circuit board of the adapter configures the adapter for either a 3.5-inch drive or a 5.25-inch drive. This jumper applies only to the first Bridge-File, and does not apply to a second Bridge-File if one is daisy-chained to the first.

Before installing the adapter, check the jumper settings as follows:

1. Turn the adapter assembly over so that the circuit board is visible through the runners of the mounting sled.
2. Locate the jumper W1, located near the adapter's header connector.
3. Ensure that the jumper is set nearest the 3.5" marking for a 3.5-inch drive, or nearest the 5.25" marking for a 5.25-inch drive.

Installing the 1090 Adapter

1. Remove all cables from the back of the system unit and note their locations for later reassembly.
2. Remove the computer's cover as described in the computer's *Quick Reference* booklet.
3. If you are installing the adapter in a Model 95 computer, remove the computer's plastic front panel by grasping the panel's bottom edge and unsnapping it from the front of the computer. Then unlatch and remove the metal front frame from the computer.
4. If you have two internal diskette drives installed in the system unit, remove the second diskette drive. Refer to the computer's *Quick Reference* manual or the *Guide to Operations* for instructions on how to remove the diskette drive.

5. Connect the B: connector of the computer's diskette drive cable to the adapter's J3 header connector. Make sure that the colored edge of the cable matches the Pin 1 marking on the adapter.

6. Slide the 1090 adapter into the B: diskette drive bay.

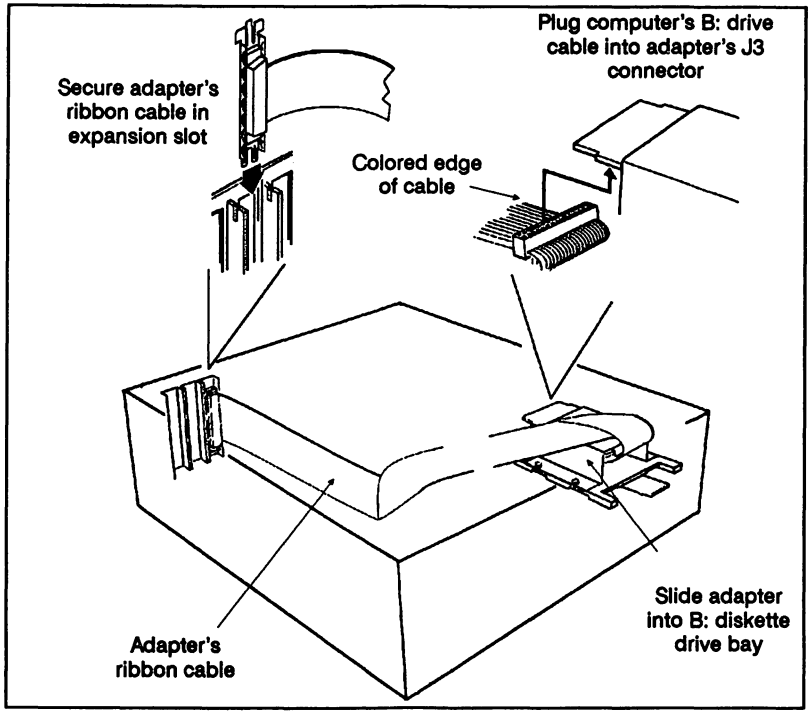

Plug computer's B: drive cable into adapter's J3 connector
Secure adapter's ribbon cable in expansion slot
Colored edge of cable
Slide adapter into B: diskette drive bay
Adapter's ribbon cable

Figure 8-1. *Installing the 1090 Adapter (Model 90 shown)*

7. Secure the bracket end of the 1090 adapter's ribbon cable in the back of the system unit. The bracket on the ribbon cable inserts in any unused slot in the system expansion bus, but to avoid interference with other installed boards, install the bracket in the slot closest to the system fan. The covers to the expansion slots are secured by thumbscrews on the outside of the system unit.

8. Replace the cover of the computer. Refer to the computer's *Quick Reference* booklet for instructions on how to install the cover.

9. Connect the Shielded Interface Cable to the 37-position D-shell connector on the bracket that was installed previously. Secure the cable with the two thumbscrews on the cable connector.
10. Connect the other end of the Shielded Interface Cable to the top 37-pin connector on the back of the Bridge-File unit. Secure the cable with the two thumbscrews on the cable connector.
11. Secure the cable with the two thumbscrews on the cable connector.
12. Reconnect the power cord and all cables to the back of the system unit.
13. Remove the cardboard head protector from the Bridge-File drive. Use the head protector whenever the Bridge-File is being transported or shipped.
14. Plug the system unit power cord back into the wall outlet.

Reconfiguring the System

1. Insert the computer's Reference Diskette into drive A: and switch on the computer. When the computer boots, it displays the error message :

   Error 174 Drive type mismatch

   or something similar. This indicates that the computer has detected the Bridge-File but is not configured to use it.

2. Bypass the error message by pressing the **<F1>** key. The computer will then load the reference diskette and ask:

   Automatically configure the system?

   Answer Y to continue. The computer auto-configures and then reboots. Remove the Reference Diskette to boot from the hard disk.

Software Installation

1. Insert the Bridge-File master diskette into drive A: At the A> DOS prompt, type:

   INSTALL <Enter>

2. The INSTALL program prompts you for information about your computer system. Answer the program's questions.

> *Note*
>
> *Before beginning the software installation, adjust both the brightness and the contrast controls on your video monitor. If these controls are not adjusted correctly, it will be difficult to read the installation screens that include text in highlighted boxes.*
>
> *If you have any problems using the INSTALL program, see the chapter in this manual titled* Software Installation *for a complete explanation of the software installation.*

3. Reboot the computer by simultaneously pressing the **<CTRL>**, **<ALT>**, and **<DEL>** keys. When it reboots, it displays a banner that includes the Bridge-File's drive letter. Use that letter to access the Bridge-File drive.

   This completes the installation of the Bridge-File for the PS/2 Model 90 or 95.

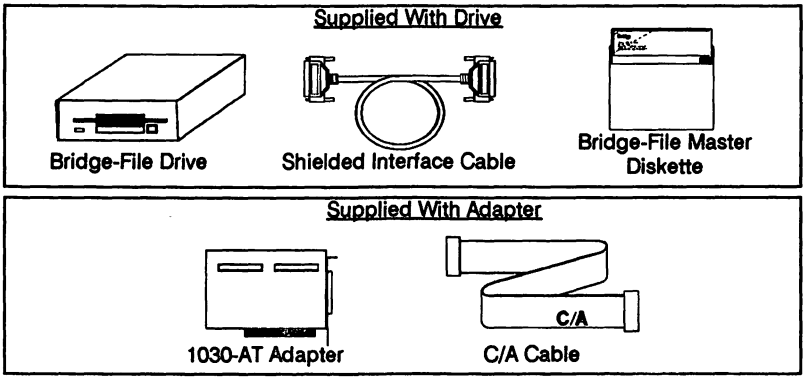
> *Note*
>
> *If your computer has only one internal floppy drive and you don't want the Bridge-File to be assigned drive letter B:, see the section titled* Non-B: Bridge-File for PS/2 Computers *near the end of the* Software Installation *chapter.*

Chapter 9

Installation IBM PC/AT

Parts Inventory

Before beginning the installation, unpack and become familiar with the parts included with your Bridge-File. For this installation, you should have received the following items:



You also need:

- Medium-sized flat-blade screwdriver

Installation Instructions for IBM PC/AT

Before beginning the installation procedure, turn off power to the computer and all connected equipment. Unplug the power cord for the computer from the wall outlet.

1. Remove all cables from the back of the computer and note their locations for later reassembly.

2. Unfasten the screws that secure the computer's cover.
3. Lift the cover off.
4. Unplug the floppy disk interface cable from its connector on the floppy disk controller board. This connector is a header-type connector near the middle of the floppy/hard disk controller.
5. Orient the floppy disk interface cable so that the colored edge of the cable matches the illustration below. Plug the cable onto connector JCA on the 1030 adapter. Note that the adapter has markings showing which cable to attach to which location.
7. Plug the C/A cable into the header connector on the floppy disk controller board. Orient the cable so that the colored edge is on top, as shown in the illustration.
8. Plug the remaining end of the C/A cable onto connector JCA on the 1030 adapter. Orient the colored edge of the cable as shown in the illustration.

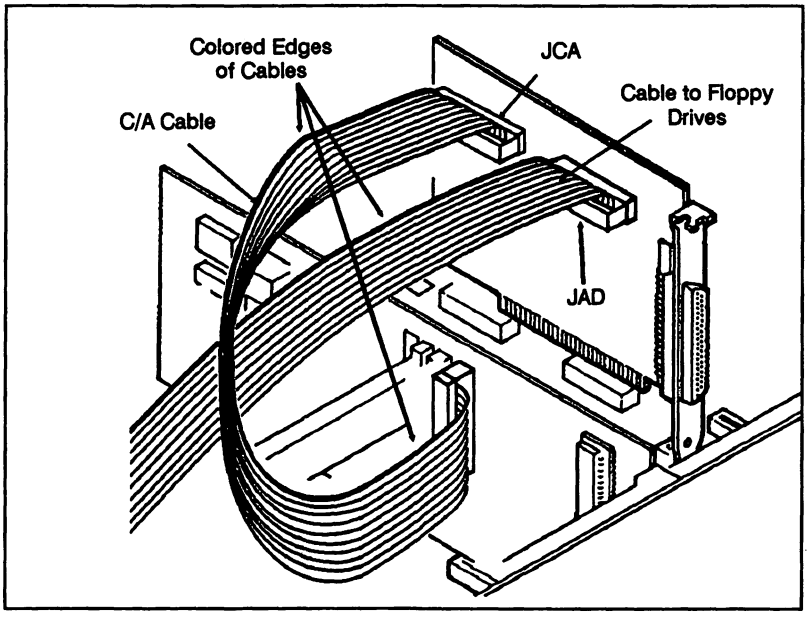


Figure 9-1. *Attaching the Cables*

9. The 1030 adapter should be installed in the I/O slot nearest the floppy disk controller. If there are circuit boards in these slots, move one of the boards to another unused slot. If one of these slots is unoccupied, remove the screw securing its slot cover.

10. Seat the 1030 adapter in the slot and re-install the slot cover screw.

> *Note*
> *If you are installing an internal Bridge-File 3.5-inch drive, go to the section titled Installing the Internal Drive to finish the installation.*

11. Replace the computer's cover. Secure the cover with the five screws on the back of the system.

12. Connect the Shielded Interface Cable to the 37 pin D-shell connector on the back of the 1030 adapter. Secure the cable using the two thumbscrews.

13. Connect the remaining end of the Shielded Interface Cable to the top 37-pin connector on the back of the Bridge-File unit. Secure the cable using the two thumbscrews.

Always make sure the computer is switched off before connecting or disconnecting the Bridge-File drive.

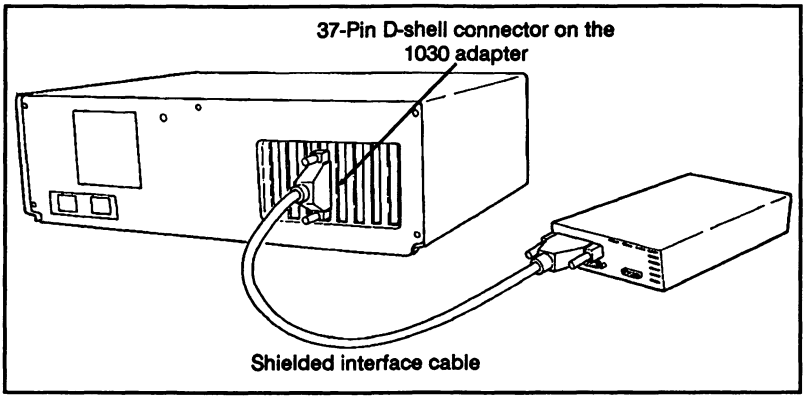


Figure 9-2. *Connecting the Drive*

14. Reconnect the power cord and all cables to the back of the system unit.
15. Remove the cardboard head protector from the diskette drive (if so equipped). Use the head protector whenever the drive is transported or shipped.
16. Plug the computer's power cord back into the wall outlet.

Installing the Internal Drive

This section applies only if you are installing an internal Bridge-File 3.5-inch drive in an IBM PC AT computer.

1. If there is already a diskette drive installed in the B: drive bay, remove that drive from the computer. See the computer's documentation to remove the drive.
2. Slide the Bridge-File internal drive into the B: drive bay and secure it with the angle brackets supplied with the computer.
3. Connect the B: connector of the computer's floppy drive cable to the connector on the back of the Bridge-File drive. The connectors on the cable and on the drive are keyed so they will only go together the right way.
4. Plug one of the computer's tri-color power cables into the power connector on the back of the Bridge-File drive. Again, the connectors on the cable and on the drive are keyed so they will only go together the right way.
5. Replace the computer's cover. Secure the cover with the five screws on the back of the system.

Software Installation

1. Switch on and boot the computer.
2. Insert the Bridge-File master diskette into drive A: At the A> DOS prompt, type:

   INSTALL <Enter>

3. The INSTALL program prompts you for information about your computer system. Answer the program's questions.

> *Note*
>
> *Before beginning the software installation, adjust both the brightness and the contrast controls on your video monitor. If these controls are not adjusted correctly, it will be difficult to read the installation screens that include text in highlighted boxes.*
>
> *If you have any problems using the INSTALL program, see the chapter in this manual titled* Software Installation *for a complete explanation of the software installation.*

4. Reboot the computer by simultaneously pressing the **<CTRL>**, **<ALT>**, and **<DEL>** keys. When it reboots, it displays a banner that includes the Bridge-File's drive letter. Use that letter to access the Bridge-File drive.

This completes the installation of the Bridge-File for IBM PC/AT computers.

Chapter 10

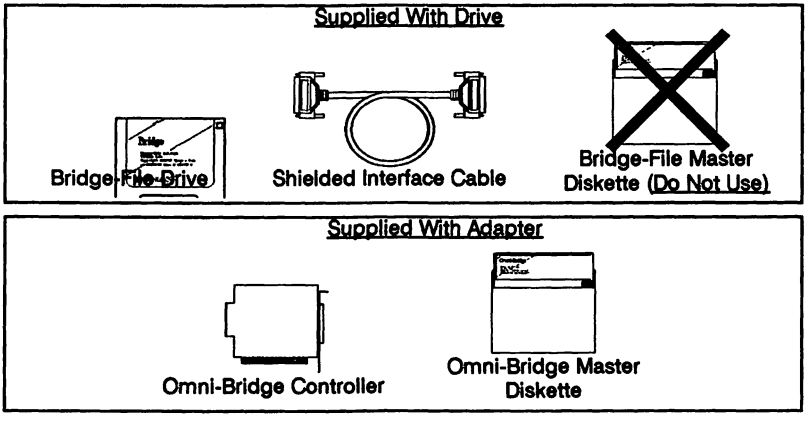
Installation PC, XT, and AT Compatibles

Installation Notes

This chapter explains how to install an external Bridge-File on a PC, XT, or AT compatible computer. The installation described here uses the SYSGEN Omni-Bridge controller.

Parts Inventory

Before beginning the installation, unpack and become familiar with the parts included with your Bridge-File. For the external installation, you should have received the following items:



You will also need:

- Medium-sized flat-blade screwdriver

Installing the Bridge-File

Before beginning the installation procedure, turn off power to the computer and all connected equipment. Unplug the power cord for the computer from the wall outlet.

1. Unfasten the screws that secure the computer's cover.
2. Lift the cover off. Note that on some computers with key locks, the cover cannot be removed unless the lock is in the OPEN position.
3. Find the controller's two switchbanks. Each switchbank consists of a row of four switches, and is located at the top edge of the controller. The switchbanks are identified as SW1 and SW2 by white markings on the circuit board. Check the switchbanks to make sure they are set as follows:

   Switchbank SW1

Switch	**1**	**2**	**3**	**4**
Setting	**Off**	**Off**	**Off**	**Off**

   Switchbank SW2

Switch	**1**	**2**	**3**	**4**
Setting	**Off**	**Off**	**On**	**On**

4. Find an empty slot in your computer's I/O bus; either an 8-bit (short) or 16-bit (long) slot will do. Undo the screw from the slot cover behind the chosen slot and remove the slot cover.
5. Insert the Omni-Bridge controller into the chosen slot and secure it with the screw removed from the slot cover.
6. Reinstall the cover of the computer and secure the cover with the screws on the back of the computer.
7. Connect the Omni-Bridge to the bottom connector of the Bridge-File drive with the Shielded Interface Cable. Secure the connections by tightening the thumbscrews on the cable connectors.

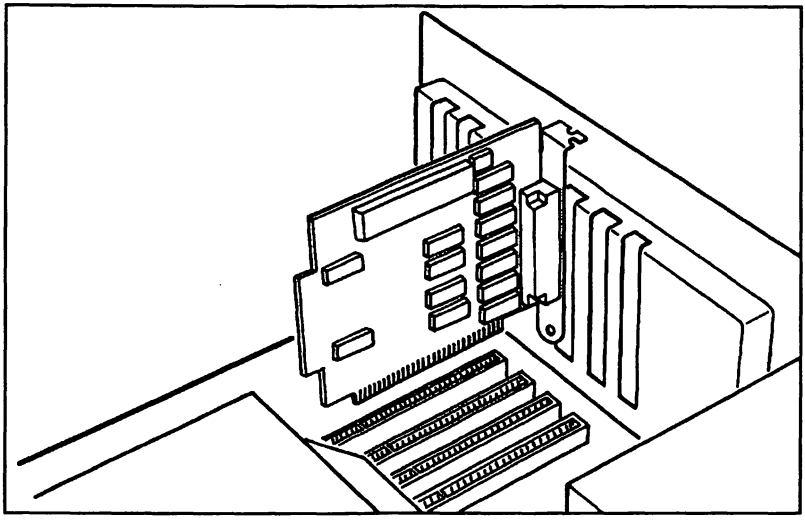


Figure 10-1. *Inserting the Omni-Bridge controller*

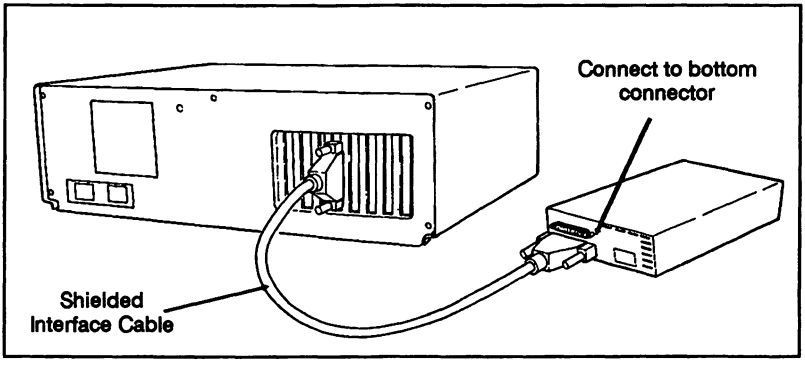


Figure 10-2. *Connecting the Bridge-File drive*

Always make sure the computer is switched off before connecting or disconnecting the Bridge-File drive.

8. Reconnect the power cord to the back of the computer.
9. Plug the computer's power cord back into the wall outlet.

Software Installation

Software installation reconfigures your computer for the Bridge-File drive and copies the Omni-Bridge software onto your hard disk or start-up diskette. After installing the Bridge-File drive, install the software as follows:

1. Switch on and boot the computer.

> *Note*
>
> *Be sure to use the Omni-Bridge software diskette supplied with the Omni-Bridge controller, and not the Bridge-File diskette, for the software installation.*
>
> *Also, before beginning the software installation, adjust both the brightness and the contrast controls on your video monitor. If these controls are not adjusted correctly, it will be difficult to read the installation screens that include text in highlighted boxes.*

2. Insert the Omni-Bridge diskette into drive A: and at the A> DOS prompt, type

   INSTALL <Enter>

3. The INSTALL program prompts you with the following questions:

   Enter the drive your system normally boots from:

   The default response to this question is C. If your computer normally boots from a hard disk with drive letter C:, press **<Enter>** to accept the default. If you normally boot your computer from a floppy, type A and press **<Enter>**.

   Select type(s) of Bridge drive(s) installed:

   Type of 1st Internal OmniBridge Drive:
   Type of 2nd Internal OmniBridge Drive:
   Type of 1st External OmniBridge Drive:
   Type of 2nd External OmniBridge Drive:

   Each of these lines are followed by a field for the type of drive. Initially, all of the fields are set to "NONE." Press the Enter key twice to place the cursor on the third line, "Type of 1st External

Omni-Bridge Drive." Then use the arrow keys to change the field to the drive type of your Bridge-File drive. Press the <Enter> key to go to the next line.

If you are installing two external Bridge-Files, set the drive type of the fourth line, "Type of 2nd External Omni-Bridge Drive." to the drive type of your second Bridge-File drive. Otherwise, press the <Enter> key to skip this line.

Installing:

Type of 1st Internal OmniBridge Drive: NONE
Type of 2nd Internal OmniBridge Drive: NONE
Type of 1st External OmniBridge Drive: 3-1/2 1.44MB
Type of 2nd External OmniBridge Drive: NONE

on boot drive C:

Is this correct?

This question asks you to confirm that the installation information is correct. In this example, we're installing an external Bridge-File 3.5 on a computer that boots from a C: hard disk.

If the information listed on your screen matches your installation, press **<Enter>** to accept the default answer **Y** for yes.

If the information does not match your installation, type **N** for no and press **<Enter>**. The program will go through the installation again.

4. Reboot the computer by simultaneously pressing the **<CTRL>**, **<ALT>**, and **<DEL>** keys. When it reboots, it displays a banner that includes the Bridge-File's drive letter. Use that letter to access the Bridge-File drive.

This completes the installation of the Bridge-File for PC-, XT-, and AT- compatible computers.

Formatting Diskettes with the Omni-Bridge

If your computer is running DOS version 3.3 or later, use the regular DOS format command to format diskettes in the Bridge-File drive. However, if your computer is running a DOS version earlier than 3.3, use the OFORMAT command supplied on the Omni-Bridge master diskette.

Type the program name, OFORMAT, for a summary of the available command features.

To format a diskette, type:

OFORMAT d: /F:n /V

where: d: = drive letter

options: /F:1 = 360-Kilobyte, Double-sided, double-density
/F:2 = 1.2-Megabyte, Double-side, high-density
/F:3 = 720-Kilobyte, Double-sided, double-density
/F:4 = 1.44-Megabyte, Double-sided, quad-density
/V = prompt for volume label

Chapter 11

Software Installation

Automatic Installation for DOS

This section explains how to use INSTALL, the Bridge-File's automatic software installation program.

If you are using the Omni-Bridge adapter, refer to the installation chapter, or to the Omni-Bridge Owner's Manual, *for software installation instructions.*

Note

Before beginning the Bridge-File software installation, adjust both the brightness and the contrast controls on your video monitor. If these controls are not adjusted correctly, it will be difficult to read Bridge-File installation screens that include text in highlighted boxes.

On IBM PS/2 Model 50 and up computers, the Reference Diskette's automatic configuration must be performed after the Bridge-File hardware has been installed. If you haven't already run the automatic configuration, see the section of this chapter titled Bypassing Error 162.

If you are installing the Bridge-File on a computer running OS/2, see the section of this chapter titled *Installing Under OS/2.*

1. Switch on and boot the computer.
2. Insert the Bridge-File diskette into drive A:
3. At the A> DOS prompt, type

   INSTALL <Enter>

4. The INSTALL program prompts you with the following questions:

   Your system is found to be a:

   PC/AT or compatible

   Is this correct ?

   This first question asks you to confirm that the INSTALL program correctly determined your computer type. In this example, the program determined that the computer was an AT-compatible.

   If the computer type listed matches your computer, type **Y** for yes. If the computer type listed does not match your computer, type **N** for no. The program will then display a list of computer types. Select your computer type from the list and press the **<Enter>** key.

   Enter the drive your system normally boots from:

   The default response to this question is C. If your computer normally boots from a hard disk with drive letter C:, press **<Enter>** to accept the default. If you normally boot your computer from a floppy, type **A** and press **<Enter>**.

   Does your adapter plug into the PC bus (1030 series adapter) ?

   You are asked this question only if you are installing a Bridge-File on a PS/2 model 30 or 30 286. The purpose of this question is to determine what type of Bridge-File adapter you are using. Unless you are using one of the Bridge-File slide-type adapters (which plug into the B: diskette drive bay) press the **<Enter>** key to select **Y** for yes.

   How many external Bridge-Files are attached?

   Unless you have more than one external Bridge-File drive connected to your computer, press **<Enter>** to accept the default value of **1**.

   How many internal drives are present?

   For this question, enter the number of *internal floppy disk or floppy tape* drives and press the **<Enter>** key. Do not include hard disk drives or non-floppy-tape drives when you answer this question.

Install Bridge-File as drive B: ?

The program asks this question only if your computer is:

- A PS/2 Model 50 or above with only one internal diskette drive and no floppy tape drive.
- An AT or compatible with only one internal diskette drive (and no floppy tape drive) in which you are installing a Bridge-File 3.5 internal drive

Other computers are not eligible for B: installation of the Bridge-File, and must have the Bridge-File assigned the next available drive letter (such as D:).

Note

If the program asks you if you want to install the Bridge-File as drive B: and you answer no, the Bridge-File is assigned the next available drive letter, usually D:. However, the Bridge-File may also respond when you type the drive letter B:. If so, do not attempt to access the Bridge-File as drive B:, as this may cause data errors in the file read or written by the Bridge-File.

If you are installing the Bridge-File on a PS/2 Model 50 or up computer with only one floppy drive and you don't want the Bridge-File to be assigned drive letter B:, see the section titled Non-B: Bridge-File for PS/2 Computers *near the end of this chapter.*

Is there an Internal Bridge-File installed?

You are asked this question only if your computer is an AT or compatible machine. The default answer is **N** for no. Unless you have installed an internal Bridge-File 3.5-inch 1.44 Mb drive inside your computer, press **<Enter>** to accept the default.

Select the types of Bridge-File(s) installed:

Type of 1st External Bridge-File:

This question includes a field in which the Bridge-File type appears. Use the arrow keys on your keyboard to scroll through the available drive types until the appropriate choice appears. Then press the **<Enter>** key.

Installing:

1 External drive
3 1/2" 1.44MB
in a PC/AT or compatible
running DOS off of Boot drive C:

Is this correct?

This question asks you to confirm that the installation information is correct. In this example, we're installing an external Bridge-File 3.5 on an AT-compatible machine that runs DOS and boots from a C: hard disk.

If the information listed on your screen matches your installation, press **<Enter>** to accept the default answer **Y** for yes.

If the information does not match your installation, type **N** for no and press **<Enter>**. The program will go through the questions again.

Reboot Your Computer

Reboot your system by turning the power off and then on, or pressing the **<Ctrl>-<Alt>-<Del>** keys. As the system goes through its boot sequence, you should see the Bridge-File banner appear on the screen. Following the boot sequence, if the hardware and software have been installed correctly, you will have full access to your Bridge-File drive.

Running VIEW

To confirm that the Bridge-File has been installed in the anticipated position in your system, run the Bridge-File VIEW utility. This program displays the letter designations assigned to all connected Bridge drives in your system.

Functions Performed by INSTALL

The INSTALL program detects the model computer you are using and inserts the appropriate Bridge-File driver statement in the last position in your CONFIG.SYS file. If CONFIG.SYS does not yet

exist, INSTALL creates it. When the system boots, logical drive designations are assigned according to the connected devices that are recognized and the order of special-purpose drivers in CONFIG.SYS.

If you are using a RAM disk with your system, or have other devices that you want assigned particular drive designations, you may want to use a text editor to alter the position of the driver statement in CONFIG.SYS after you have performed the Bridge-File software installation.

INSTALL also copies BRIDGE.DRV or BRIDGE_B.DRV to the root directory of your primary drive. INSTALL replaces the BRIDGE.DRV file if one already exists in the root directory.

> *Note*
> *Any utilities that you may want to use when operating under DOS 3.2 or earlier versions should be copied to your hard disk for more convenient access.*

System Startup with the Bridge-File

For the Bridge-File to operate properly, your computer must boot from a disk on which the Bridge-File software installation has been performed. If you boot your system from another disk (on which the software installation has not been performed), your Bridge-File will not work.

Bypassing Error 162

On those PS/2 systems that use the IBM Reference Disk for configuration changes (the Model 50, 50Z, newer Model 55, 60, 70, and 80), the first time you start the computer after installing the Bridge-File, your system responds with the message:

Error 162 Drive type mismatch

> *Note*
> *On some systems, such as the IBM PS/2 Models 90 and 95, this error message has the number 174 .*

This indicates that the computer has detected the installed Bridge-File and cannot locate information describing it in the internally stored configuration tables. To bypass the error message, place your working copy of the IBM Reference Disk into Drive A:, and press the **<F1>** key.

Once the configuration program has loaded from the Reference Disk in Drive A:, the program asks:

Do you want to auto-configure (Y,N)?

Answer **Y** to continue with the configuration change.

> *Note*
> *On earlier PS/2 computers, the Reference Diskette's Set Configuration menu does not have a selection for 1.2 Mbyte 5.25-inch drives. On these computers, after automatic configuration the B: diskette drive type is listed on the Set Configuration menu as 1.44 Mbyte 3.5-inch. This is the proper setting, though it might not match the actual size or capacity of the Bridge-File drive. On computers for which the 1.2 Mbyte 5.25-inch setting is available, it should be selected when that type Bridge-File is installed and automatic configuration is run.*

Installing Under OS/2

The Bridge-File software includes support for the OS/2 operating system environment, including OS/2 versions 1.00 through 1.30, both standard and extended editions.

Installation of the Bridge-File software can be carried out in three different ways:

- By using the DOS compatibility mode of OS/2 Presentation Manager and running Bridge-File INSTALL
- By opening the OS/2 File Manager and clicking on INSTALL.EXE
- By opening an OS/2 window and running INSTALL inside the window

> *Note*
> *Although many of the configuration settings are made automatically by the Bridge-File INSTALL program, INSTALL displays the questions asked during the normal MS-DOS Bridge-File installation, and in most of these cases, as noted in the following text, you simply accept the default.*

Running INSTALL from OS/2

The Bridge-File INSTALL program automatically copies the necessary files to your hard disk drive, and, if run from the DOS compatibility box, detects the type of system you are using and configures the software accordingly. If you do not use the DOS compatibility box, you must manually select your system type from available options on the INSTALL menu.

Follow this procedure to install the software:

1. Load the Bridge-File INSTALL program from within OS/2 Presentation Manager in one of the three possible ways:

   A. Entering the DOS compatibility box and typing:

   A:INSTALL

   B. Accessing File Manager, directing it to Drive A:, and clicking on INSTALL.EXE

   C. Opening an OS/2 window and running A:INSTALL from the window

2. If you have started INSTALL from File Manager or an OS/2 window, use the Select Bar to choose your system from those displayed on the initial screen. (If you have used the DOS compatibility box, your system selection is made automatically.

3. The programs asks:

   How many external Bridge-File drives are attached?

   The only valid choices allowed by the program are 0 or 1.

4. The program asks:

   How many internal drives are present?

Once again, the only acceptable values are 0 or 1.

5. The program asks:

   Install Bridge-File as drive B:? (Y)

   This default selection cannot be changed under OS/2; the installed Bridge-File must be Drive B:.

6. The program then asks you to:

   Select the type of Bridge-File(s) installed.

   Use the arrow keys, if necessary, to change the drive type shown on this menu.

7. INSTALL then displays a final confirmation menu, for example:

   Installing:
   1 External drive
   5 1/4" 1.2 Mb
   in a PS/2 Model 70

8. If these values are correct, press **<Enter>** to confirm the installation. If you do not confirm the selections, the INSTALL program returns you to the initial question and allows you to make any necessary changes to these values.

   Once the Bridge-File software is installed, you can access the drive as Drive B: after your computer system is rebooted.

OS/2 System Configurations

System configurations for PS/2 Micro Channel models and PC/AT models are somewhat different, as explained in the following two sections.

PS/2 Micro Channel Configurations

Support for PS/2 Micro Channel systems, Model 50 and up, includes the following parameters:

- Only one external Bridge-File can be installed per system

- No external daisy-chaining is permitted
- The Bridge-File drive must be installed as Drive B:
- 5.25-inch 360 kilobyte or 1.2 Megabyte and 3.5-inch 1.44-Megabyte drives are supported

PC/AT and Compatible Computers

Support for PC/AT and compatible computers includes the following parameters:

- Only one external Bridge-File can be installed per system
- No external daisy-chaining is permitted
- The Bridge-File drive must be installed as the next available drive letter (not as drive B:)
- The 3.5-inch Bridge-File drive can only use low-density formatting (720 kilobytes)
- The Bridge -File must be used with the 1030-AT adapter, and not the Omni-Bridge

Note

Support for floppy-drive peripherals for PC/AT compatible computers depends on the presence of the device driver provided with the OS/2 operating system, EXTDSKDD.SYS. In order for the Bridge-File to work, this file must be located in the directory C:\OS2. The INSTALL program invokes this driver in the CONFIG.SYS file as follows:

DEVICE=C:\OS/2\EXTDSKDD.SYS /D:2 /F:2

Non-B: Bridge-File for PS/2 Model 50 and Up

Applies **only** *to PS/2 Models 50 and up with only one floppy drive*

Refer to this section for special installation instructions if you are installing a Bridge-File on a PS/2 Model 50 or up with only one

internal floppy drive and you don't want the Bridge-File to be assigned the drive letter B:.

In order to force the INSTALL program to install the Bridge-File at the next available drive letter (usually D:) instead of B:, follow these special installation instructions:

1. When installing the Bridge-File, follow all the normal hardware installation instructions in the chapter for your computer except the following:

   Connect the Shielded Interface Cable to the **bottom** connector on the back of the Bridge-File, and not to the top connector as stated in the installation chapter.

2. After making sure the Shielded Interface Cable is connected to the Bridge-File's bottom connector, insert your working copy of the computer's Reference Diskette into drive A: and switch on the computer. The computer may display the following error code when it boots:

   Error 162 Drive type mismatch

3. If the Error 162 message was displayed, bypass it by pressing the **<F1>** key. The computer will then load the reference diskette and ask:

   Automatically configure the system?

   Answer Y to continue. The computer auto-configures and then reboots. Remove the Reference Diskette to boot from the hard disk.

> *Note*
> *For a non-B: Bridge-File, after automatic configuration the B: diskette drive type should be listed on the Set Configuration menu as* Not Installed.

4. Run the Bridge-File's INSTALL program, and answer all of the program's questions as they apply to your computer except the the following:

   How many Internal drives are present?

   For this question, type **2** and press the **<Enter>** key, even though your computer has only one floppy drive.

When your computer reboots after running INSTALL, you should have access to the Bridge-File as the next available drive letter, and not as drive B:. Read the Bridge-File banner that appears when the computer boots to determine the actual drive letter assigned to the Bridge-File.

Chapter 12

Using the Bridge-File

Generally, you can use your Bridge-File diskette drive exactly the same way as you would use any of the diskette drives inside the system unit of your computer. Those minor areas where there are differences are discussed throughout this manual.

If you need more information on how to copy programs or files to or from the Bridge-File, consult your DOS manual or the Guide to Operations that came with your computer.

Using VIEW.COM

A utility program called *VIEW.COM* included on the SYSGEN Bridge-File diskette enables you to quickly determine which drive letter designations on your system are assigned to Bridge-Files. VIEW can be run by typing the drive letter where the program resides followed by the program name:

n:View <Enter>

As an example, the program's response might be:

Sysgen Bridge-File View.com Ver 1.00, 8-11-88

Sysgen Bridge-Files installed at C: D:

> *Note*
> *When accessing the Bridge-File drive, be sure to use the drive letters reported by VIEW.*

Using FORMAT35

FORMAT35 allows you to format 3.5-inch diskettes for 720-Kilobyte or 1.44-Megabyte use, or to format 5.25-inch diskettes for 360-Kilobyte or 1.2-Kilobyte capacity.

> *Note*
> *If you are using DOS 3.3 or later, you can use the standard DOS FORMAT command to accomplish the same purpose.*

Type the program name, FORMAT35, for a summary of the available command features.

To format a diskette, type:

FORMAT35 d: /F:n /V

where: d: = drive letter

options: /F:1 = 360-Kilobyte, Double-sided, double-density
/F:2 = 1.2-Megabyte, Double-sided, high-density
/F:3 = 720-Kilobyte, Double-sided, double-density
/F:4 = 1.44-Megabyte, Double-sided, quad-density
/V = prompt for volume label

Taking Care of Your Bridge-File

The SYSGEN Bridge-File is a durable, long-lasting storage device containing many precision mechanisms. It can be damaged by rough or improper handling. Please observe the following precautions when handling your Bridge-File.

- Do not subject the unit to shocks or rough handling. Ship the unit only in the supplied shipping carton.
- Do not place the unit on a soft surface or a surface where the ventilation holes on the bottom of the unit can become blocked.
- Do not expose the unit to extremes of temperature or humidity. See *Appendix A* for temperature and humidity limitations.
- Load the cardboard or plastic head protector (supplied with all Bridge-File 5.25 drives) into the Bridge-File whenever you transport or ship the unit.
- Use a commercially available cleaning diskette on a regular basis. Follow the instructions that are supplied with the cleaning diskette.

High-Density vs. Low-Density Formatting

Since IBM originally introduced high-density diskette drives, compatibility problems have existed between 360-Kilobyte and 1.2-Megabyte drives. Although a 5.25-inch high-density (1.2-Megabyte) drive reads 360-Kilobyte diskettes without difficulty, problems often occur when the high-density drive writes to or formats the low-density (360-Kilobyte) diskette. After the write operation or formatting, the 360-Kilobyte diskette sometimes cannot be read by a low-density drive.

How is the Data Recorded?

The nature of the formatting problem involves the method used to record the data on individual tracks and the positioning of the read/write heads on low-density drives. Electronic data is recorded on tracks. Each track is a concentric circle at a precise distance from the hub of the diskette. A high-density diskette has twice as many tracks for data storage (80) as a low-density diskette (40).

When a high-density drive formats or writes to a low-density diskette, it positions the data on tracks that are narrower and more accurately aligned than on a low-density diskette. Unfortunately, this data placement may not always align with the less precise, broader tracks that are used on the earlier technology 360-Kilobyte drives. When this misalignment exceeds the ability of the low-density drive to locate and read the data, data read errors occur. Your computer may display the message:

Data Read Error
Abort, Retry, Ignore?

Safe Data Transfer

Does all of this talk about formatting misalignment mean that you cannot transfer diskettes between the two types of drives? No, not exactly. Many times the process works without difficulty. Unfortunately, the reliability of the operation cannot always be predicted. Depending on the model of 360-Kilobyte drive being used, the cleanliness of the read/write heads, the quality of the

diskette media surface, and other factors, writing and formatting of 360-Kilobyte diskettes on the Bridge-File should be performed with caution. The results cannot be guaranteed.

Use your own judgement and discretion whenever writing and formatting 360-Kilobyte diskettes on the Bridge-File. The following guidelines should prove useful.

Guidelines for Maintaining Data Integrity

To avoid experiencing symptoms of data loss and formatting mismatches, follow these guidelines.

- Never take a high-density diskette that has been formatted at the high-density level (1.2 Megabytes) and attempt to reformat it as a 360-Kilobyte diskette.
- If the data integrity of a transfer operation is important, don't use the Bridge-File to write to a 360-Kilobyte diskette that will be used on a low-density drive. DOS data read errors may occur.
- Use high-quality media at all times.
- Use a commercially available cleaning diskette on a regular basis. Follow the instructions that are supplied with the cleaning diskette.
- Protect your media from temperature extremes, static electricity, and dusty environments.

Working with DOS

For the Bridge-File to operate properly, it must be installed on a computer that is operated under **DOS version 2.1 or later.**

DOS 3.3 and later versions provide full support for access and formatting of both 3.5-inch and 5.25-inch diskettes. When using these versions of DOS, you do not need to use the SYSGEN format utility (FORMAT35) to format diskettes. You do, however, have to install the Bridge-File driver (either manually or through the SYSGEN INSTALL program).

Earlier versions of DOS have limitations when trying to access internal and external drives. Use the SYSGEN utilities to avoid the following DOS restrictions:

DOS 3.2 Cannot format high-density (1.44Mb) diskettes on the 3.5-inch drive; 720Kb is the maximum.

DOS 3.1 Cannot recognize 3.5-inch drives.

DOS 3.0 Same as DOS 3.1.

DOS 2.1 Cannot recognize 3.5-inch drives, or high-density (1.2Mb) 5.25-inch drives.

All of these difficulties are resolved by installing the SYSGEN driver and using the SYSGEN formatting utility, FORMAT35.

> *Note*
>
> *We recommend that you create a subdirectory and copy the SYSGEN Bridge-File utilities into it. This gives you convenient access to the formatting utility, and allows you to easily access other programs, like VIEW, a program that identifies assigned letters given to Bridge-File drives.*

Working with OS/2

The Bridge-File also operates with OS/2 versions 1.0, 1.1, and 1.2. Your system must meet the following requirements to work with OS/2:

- Sufficient memory as specified in the OS/2 user's manual
- An 80286 or 80386 processor
- Full compatibility with an IBM PC AT or PS/2 system

The software driver provided by IBM to be used when connecting external drives under OS/2 has several built-in limitations when working on ATs and compatibles. These limitations are discussed in the *Software Installation* chapter.

Operating under OS/2

Operating a Bridge-File under OS/2 requires some additional considerations.

PC AT Limitations

When your Bridge-File is installed on a PC AT and you are running OS/2, the following restrictions apply:

- You can only install one Bridge drive. No daisy chaining is allowed.
- The driver supplied by IBM, EXTDSKDD.SYS, does not format 3.5-inch diskettes properly. You can read and write to preformatted 3.5-inch diskettes, but you cannot format them.
- The DISKCOPY and DISKCOMP commands do not work correctly.

Rerunning INSTALL

On the PS/2 computers, whenever the Reference Disk is run to update the system configuration, modifications are made to the computer's internal memory that alter the Bridge-File parameters.

To correct this problem, you should rerun the Bridge-File's INSTALL program following each use of the IBM Reference Disk to correct these modifications.

You must rerun the INSTALL program for Bridge-File each time you make any configuration changes to your Micro Channel model PS/2 computer. Otherwise, you will not be able to access the Bridge-File properly.

Chapter 13

Installing Multiple Bridge-Files

Interconnecting

You can install two Bridge-Files on your computer if:

- Your computer is a PS/2 Model 25, 25 286, 30, 30 286, an IBM PC/XT/AT or compatible.
- Your computer is a PS/2 Model 50 or above with only one internal floppy disk drive.

The following figures (next page) illustrates correct interconnections for different combinations of Bridge family equipment.

If you have an IBM PC AT or compatible computer, you may install an internal Bridge-File in addition to these configurations.

If you have just purchased two external Bridge-Files to install on the same computer, go to the appropriate section in this manual to install the first Bridge-File as a single unit. Then refer to this chapter to install the second unit.

Note that the interconnections for systems using the 10XX adapters are exactly opposite those where the Omni-Bridge adapter is used.

Note

If you are installing a second Bridge-File on a PS/2 Model 90 or 95 computer, jumper W1 on the 1090 adapter must be set to the drive type of the first Bridge-File in the chain (B:). See the chapter titled Technical Reference for Bridge-File Adapters *for more information about the 1090 adpater.*

Dual Bridge with 10XX Adapter

The following illustration shows the correct manner to daisy chain two Bridge units to a computer that has a 1030, 1050, 1055, 1060, 1070, or 1090 adapter installed.

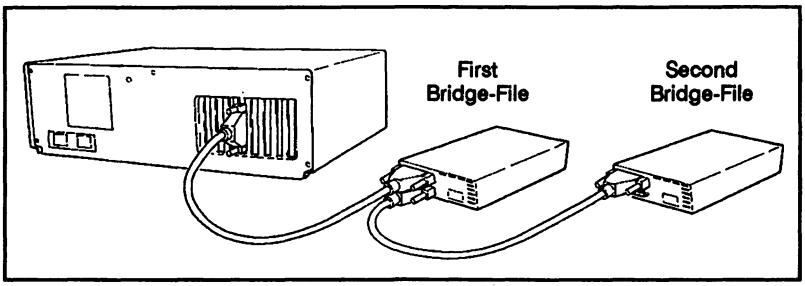


Figure 13-1. *Dual Bridge with 10XX Adapter*

Dual Bridge with Omni-Bridge Controller

The following illustration shows the correct manner to interconnect two Bridge units to a computer that has SYSGEN's Omni-Bridge controller installed.

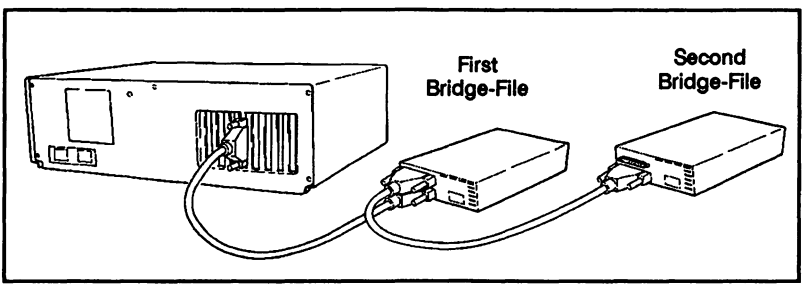


Figure 13-2. *Dual Bridge with Omni-Bridge*

Installation of Daisy-Chained Bridge Units

Before beginning the installation procedure, turn off power to the computer and all connected equipment.

1. Locate the daisy-chaining illustration in the previous section that matches your equipment configuration.
2. Connect the cables between the adapter and Bridge-File, and then between the Bridge-File and the daisy-chained Bridge unit as shown in the illustration.

Note that in systems with the Omni-Bridge controller installed, the cabling is opposite those configurations that use the 10XX-series adapters. Check the illustration labels carefully to ensure you are using the correct interconnections. Refer to your Omni-Bridge Owner's Manual *for detailed installation instructions.*

3. Secure the cable connections by tightening the thumbscrews on the cable connectors.

Software Installation

After adding the second Bridge-File, you must re-run the software installation:

1. Insert the Bridge-File master diskette (or the Omni-Bridge master diskette if you are using an Omni-Bridge adapter) into drive A: At the A> DOS prompt, type:

   INSTALL <Enter>

2. The INSTALL program prompts you for information about your computer system. Answer the program's questions.

Note

Before beginning the software installation, adjust both the brightness and the contrast controls on your video monitor. If these controls are not adjusted correctly, it will be difficult to read the installation screens that include text in highlighted boxes.

If you have any problems using the INSTALL program, see the chapter in this manual titled Software Installation for a complete explanation of the software installation.

If the INSTALL program asks if you want to install a Bridge-File as drive B:, you must answer Y for yes. Otherwise you cannot have two Bridge-Files installed on your computer.

3. Reboot the computer by simultaneously pressing the **<CTRL>**, **<ALT>**, and **<DEL>** keys. When it reboots, it displays a banner that includes the Bridge-File drive letters. Use those letters to access the Bridge-File drives.

Adding Auxiliary Power

If your computer is an IBM PC/XT or a compatible using the SYSGEN auxiliary power supply, you only need auxiliary power on one of the Bridge units. Power will be carried to the other unit through the shielded interface cable.

Appendix A

Problem Solving Guide

Solving Bridge-File Problems

If you experience any problems when installing or using the Bridge-File, this section provides a set of guidelines for finding the source of your problem and correcting it. First, follow the steps on the *Short Checklist.* If this does not help, try the *Long Checklist.* If this still does not resolve your problem, refer to the *Troubleshooting Symptoms Guide* at the end of the chapter to see if you can pinpoint the cause of trouble.

Categories of Problems

Problems with the SYSGEN Bridge-File drive fall into two general categories:

- Those that occur when first trying to operate the unit after installation.
- Those that occur after the Bridge-File has been operating properly for some time.

Problems experienced just after the installation can usually be traced to the installation itself. Often, if you rerun the INSTALL program, or double-check the connection of all cables, the problem will be eliminated.

Problems experienced after the Bridge-File has been operating for some time most often occur when some other device is installed that interferes with the Bridge-File hardware or software. If this happens, it does not automatically mean that the Bridge-File is not compatible with the new device. The incompatibilities can usually be resolved so that both units will work properly.

Some Bridge-File failures cannot be traced to either the Bridge-File installation or to the installation of some other device. Though these failures are usually caused by inadvertently disturbing the Bridge-File's hardware or software, they could be caused by an actual defect in the Bridge-File equipment.

Your SYSGEN Technical Support specialist can help you determine when a Bridge-File problem is equipment related; in some of these situations the unit should be returned for repair. Fortunately, most problems do not involve defective equipment, and can be solved through simple measures by yourself.

Short Checklist

This checklist provides a quick check of the most common sources of trouble with the Bridge-File. Test each listed item in sequence if you are having problems with your Bridge-File installation. If the trouble persists, continue with the *Long Checklist.*

The items covered in the *Short Checklist* include:

- Checking the external cable and connections
- Running Autoconfiguration (Micro Channel models only)
- Rerunning the Bridge-File INSTALL program
- Running the Bridge-File VIEW utility
- Trying the Bridge-File

These procedures are covered in the following subsections.

Checking the External Cable and Connections

Refer to the hardware installation chapter that applies to your computer to make sure that the Bridge-File's interface cable is connected to the correct port on the back of the Bridge-File.

After verifying that the external cable is connected to the correct port on the back of the Bridge-File, go on to the next item in this checklist.

Running Autoconfiguration

This section applies only to IBM PS/2 Models 50 and above. If your computer is not one of these, go on to the next item in this checklist.

Boot your computer using the working copy of the Reference Diskette. The number 162 may appear in the upper left corner of the screen for a moment. Ignore it. After the computer boots from the Reference Diskette, the screen displays the IBM logo. Press **<Enter>** at the prompt to continue.

If the number 165 appears in the upper left corner of the screen, it means that you have not booted the computer from your most current Reference Diskette. This error is not caused by the Bridge-File. Try rebooting from a current copy of the Reference Diskette.

When the computer prompts you, asking if you want it to autoconfigure, answer yes. Autoconfiguration ensures that the computer can communicate properly and interact with the newly installed Bridge-File. After the Autoconfiguration is run, remove the Reference Diskette and press **<Enter>** to reboot the system.

If the computer doesn't ask if you want to autoconfigure, select Set Configuration from the main menu of the Reference Diskette. This causes the Set Configuration menu to appear. From the Set Configuration menu, choose Run Autoconfiguration. This causes the computer to autoconfigure. After the Autoconfiguration is run, remove the Reference Diskette and press **<Enter>** to reboot the system.

After autoconfiguring and rebooting, continue on with the next item in this checklist, rerunning the Bridge-File software INSTALL program. Do not change any configuration settings from those chosen during the autoconfiguration.

Rerunning the Bridge-File INSTALL Program

Refer to the Software Installation chapter of this manual and reperform the Bridge-File's software installation.

After you run INSTALL, remove the Bridge-File diskette from drive A: and reboot your computer by simultaneously pressing the **<Ctrl>**, **<Alt>**, and **<Del>** keys.

Once the system reboots, continue with the next item in this checklist.

Running the Bridge-File VIEW utility

Insert the Bridge-File utilities diskette (the diskette that came with your Bridge-File) in drive A: of your computer and type:

A:VIEW <Enter>

This loads the VIEW utility. VIEW tells you what drive letter the computer assigns to the Bridge-File diskette drive. Make a note of this drive letter.

If the VIEW utility tells you that there is no Bridge-File drive installed, go to the *Long Checklist.*

Trying the Bridge-File

Find a diskette for your Bridge-File that you know is formatted and has data on it. Insert this diskette in your Bridge-File. Type the drive letter that VIEW identified as the Bridge-File. For example, if VIEW found your Bridge-File designated Drive F:, type:

F: <Enter>

The computer should respond by displaying the drive letter as the prompt, as in:

F>

or something similar, depending on the PROMPT currently in use. Try listing a directory on the diskette by typing:

DIR <Enter>

If the directory appears normal, insert a different diskette and list its directory. If that directory also appears correct, insert a blank diskette in the Bridge-File and try formatting it. Refer to the chapter titled *Guide to Operations* in this manual for instructions on formatting diskettes. If the Bridge-File performs these functions properly, this indicates that it is probably working correctly.

If the computer responds with an error message when you try to access the Bridge-File, such as:

General Failure error reading drive X:
Abort, Retry, Fail?

Not Ready error reading drive X:
Abort, Retry, Fail?

Invalid drive specification

or if the Bridge-File will not read or write a known good diskette, or will not format a diskette, go on to the *Long Checklist* to verify that the Bridge-File is installed properly.

Long Checklist

If you have checked all the items on the short checklist and the problem persists, check the following items:

Confirming Correct Adapter Installation

Covers all installations

Switch off the power to all of your computer equipment, disconnect your computer's power cord from both the wall outlet and the back of the computer, and remove your computer's cover. Verify that the Bridge-File adapter is installed properly as follows:

1030-PS/2 Adapter in Model 25, 25 286, 30 or 30 286

Verify that:

1. The jumper block W6 on the 1030 adapter is set to the **PS/2** position.
2. The jumper block W1 on the 1030 adapter is set to the **372** position.
3. Jumper blocks **are installed** on the pins of W2 and W5, **unless** your Bridge-File is connected to an auxiliary power supply.
4. The adapter is installed correctly. Review the appropriate hardware installation chapter.

1030-AT Adapter in a PC/AT Computer

Verify that:

1. The jumper block W6 on the 1030 adapter is set to the **AT** position.
2. The jumper block W1 on the 1030 adapter is set to the **3F2** position.
3. Jumper blocks **are installed** on the pins of W2 and W5, **unless** your Bridge-File is connected to an auxiliary power supply.
4. The adapter is installed correctly. Review the appropriate hardware installation chapter.

1050 Adapter in Model 50 or 50Z

Verify that:

1. The plastic jumper blocks on the 1050 adapter are set nearest the white **DISK** marking.
2. The adapter is installed correctly. Review the appropriate hardware installation chapter.

1055 Adapter in Model 55

Verify that:

1. The plastic jumper blocks on the 1055 adapter are set nearest the white **DISK** marking.
2. The adapter is installed correctly. Review the appropriate hardware installation chapter.

1060 Adapter in Model 60, 65, or 80

Verify that:

1. The plastic jumper blocks on the 1060 adapter are set nearest the white **DISK** marking.
2. The adapter is installed correctly. Review the appropriate hardware installation chapter.

1070 Adapter in Model 70

Verify that:

1. The plastic jumper blocks on the 1070 adapter are set nearest the white **DISK** marking.
2. The adapter is installed correctly. Review the appropriate hardware installation chapter.

1090 Adapter in Model 90 or 95

Verify that:

1. The plastic jumper block on the 1090 adapter is set nearest the white **5.25** marking if used with a Bridge-File 5.25, or nearest the white **3.5** marking if used with a Bridge-File 3.5.
2. The adapter is installed correctly. Review the appropriate hardware installation chapter.

Omni-Bridge Controller in PC, XT, or AT Compatible

Verify that:

1. Jumper blocks are installed on the pins of W1 and W2 nearest the board's bracket, **unless** your Bridge-File is connected to an auxiliary power supply.
3. The switchbanks are set as follows:

Switchbank SW1

Switch	**1**	**2**	**3**	**4**
Setting	**Off**	**Off**	**Off**	**Off**

Switchbank SW2

Switch	**1**	**2**	**3**	**4**
Setting	**Off**	**Off**	**On**	**On**

2. The Omni-Bridge controller is installed correctly. Review the appropriate hardware installation chapter.

Proper Configuration for Micro Channel Models

This section applies only to PS/2 Models 50 and up.

1. Insert your working copy of the computer's Reference Diskette into drive A: and switch on the computer. When the computer boots, it displays the error message :

   Error 162 Drive type mismatch

   or something similar (or **Error 174** on PS/2 Model 90 or 95). This indicates that the computer has detected the Bridge-File but is not configured to use it.

2. Bypass the error message by pressing the **<F1>** key. The computer will then load the reference diskette and ask:

   Do you want to auto-configure (Y,N)?

   Answer Y to continue. The computer auto-configures and then reboots.

> *Note*
>
> *After automatic configuration, the B: diskette drive type listed on the Reference Diskette's Set Configuration menu may or may not match the drive type of the Bridge-File drive. This depends on your computer, on the type of the Bridge-File drive, and whether or not it was installed as drive B:. Do not adjust the settings for the B: drive type after running automatic configuration.*

If the number 165 is displayed in the upper left corner of the screen, it means that you are not using a current copy of the Reference Diskette for your computer. This error is not caused by the Bridge-File hardware or software. Whenever you install any adapter board in the Micro Channel bus, you must copy information about that adapter to the computer's Reference Diskette. This information is stored in files with filenames that end in .ADF, such as @7965.ADF. These files are usually referred to as Adapter Description Files or ADF files. If the Reference Diskette you boot from does not have all of the ADF files for the adapters in the computer's Micro Channel bus, error 165 occurs. To alleviate this problem, reboot the computer from a current copy of the Reference Diskette that has all the necessary ADF files.

Proper Software Installation

Applies to all models except PS/2 Model 90 and 95.

The Bridge-File software must be properly installed in order for the Bridge-File to operate properly. The software is installed with the Bridge-File INSTALL program. The INSTALL program modifies the CONFIG.SYS file on the hard disk or diskette that you use to boot your computer.

> *Note*
> *In PS/2 Model 90 and 95 computers, it is not necessary to modify the CONFIG.SYS file. When run on these computers, the INSTALL program does not modify the CONFIG.SYS file. Thus, the rest of this section does not apply to these computers.*

The best way to double-check the software installation is to examine your computer's CONFIG.SYS file to see if it was modified properly. At the DOS prompt, type:

CD\ <Enter>

TYPE CONFIG.SYS <Enter>

This displays the contents of your CONFIG.SYS file. Most of the contents of the CONFIG.SYS file are irrelevant to the Bridge-File.

The important part (for the purposes of troubleshooting the Bridge-File installation) is a line which starts either:

DEVICE=BRIDGE.DRV...

or:

DEVICE=BRIDGE_B.DRV...

This line of text is the Bridge-File's Device Driver Line. The exact text of this line tells your computer about your particular Bridge-File installation.

Missing Bridge-File Device Driver Line (Except under OS/2)

If the Bridge-File device driver line is missing, it means that the Bridge-File software has not been properly installed yet. If you have run the Bridge-File INSTALL utility and the

DEVICE=BRIDGE... line isn't in your CONFIG.SYS, it could mean that the CONFIG.SYS file is locked and cannot be modified. To unlock the CONFIG.SYS file, go to the directory where your DOS utilities are stored or insert your DOS utilities diskette in drive A: and type:

A:\ATTRIB -R C:\CONFIG.SYS

This will unlock your CONFIG.SYS file. When you next run INSTALL it should properly modify your CONFIG.SYS file.

About CONFIG.SYS

When your computer boots, it looks for the CONFIG.SYS file in the root directory of the disk it booted from. If it finds this file, it reads the file's contents to get information about what devices are attached, how the memory is to be divided, and other configuration issues. The Bridge-File device driver line tells the computer to use the program BRIDGE.DRV or BRIDGE_B.DRV (depending on your Bridge-File installation) when it accesses the Bridge-File drive, and gives parameters for using that program.

The Bridge-File device driver line should in most cases be the last line of text in your CONFIG.SYS file. If it is not the last line of text (for example, if it was installed elsewhere, or some other device driver line was installed under the Bridge-File device driver line) you must move the Bridge-File device driver line to the bottom of the CONFIG.SYS. This can be done by editing the CONFIG.SYS file with your favorite text editor (for example, EDLIN). The easiest way to fix this situation, however, is just to rerun the Bridge-File INSTALL program, making sure that the program correctly identifies the system and attached equipment.

Note

One exception to this principle applies if you are running a network which uses a device driver on your system. In such cases, the network driver statement should appear as the last line in the CONFIG.SYS file. Other exceptions may also apply for certain application programs. Check the documentation for your application to obtain this information.

Troubleshooting Symptoms Guide

The symptoms exhibited by the Bridge-File can be useful in pin-pointing the source of trouble, but may be misleading. Before referring to this section, be sure that you have gone through at least the Short Checklist. Most Bridge-File problems can be solved by this checklist.

Symptoms and Displayed Errors

Drive Not Ready error

- Verify hardware installation correct
- Verify software installation correct
- Verify that the drive is receiving power from the computer

General Failure error

- Check to make sure that you have a formatted diskette inserted

Sector Not found

- Diskette may be bad. Try another known good diskette.

Data Read Error Reading Drive N:

- Rerun the software installation program. Then run VIEW to see if the Bridge-File is recognized.

Invalid Drive Specification

- Rerun the software installation program. Then run VIEW to see if the Bridge-File is recognized.

Missing Bridge-File Banner (Except PS/2 Model 90, 95, or under OS/2)

When the Bridge-File software is properly installed, a banner is displayed each time you power up your system. This banner includes the Bridge-File software revision number, and other information.

Look for this banner when you first power up your system to verify that the Bridge-File is being recognized by the system. If the banner is not present, this indicates that your software probably has not been installed correctly.

Check your CONFIG.SYS file (as shown in the following subsection), and, if necessary, rerun the Bridge-File INSTALL program.

Drive Speed Error (Except PS/2 Model 90, 95)

When running the "Test the computer" option from the IBM PS/2 reference diskette, the diagnostics may report the following error for the Bridge-File:

Diskette drive B is not running at the correct speed

Disregard this error message. It is caused by the test software misinterpreting the Bridge-File's drive type, and occurs even if the Bridge-File is in perfect working order.

Isolating the Bridge-File Driver

Sometimes the device driver for the Bridge-File conflicts with another driver referenced in the CONFIG.SYS file. The easiest way to pinpoint this type of problem is by isolating the Bridge-File driver in the CONFIG.SYS file. This means changing the CONFIG.SYS file so that the only device driver listed there is the Bridge-File's driver.

To isolate the Bridge-File driver, start by printing your CONFIG.SYS file so that you have a written record of it. The easiest way to print this file is to hold the **<Ctrl>** key down while pressing the **<P>** key once. Then type:

TYPE CONFIG.SYS <Enter>

This approach works for most dot-matrix printers. If you have a laser-type printer, you may have to press the Form Feed button on the printer to spool the page out. After printing the file, hold the **<Ctrl>** key down and press the **<P>** key once more to stop printing.

After printing the the CONFIG.SYS file, rename it. To rename the CONFIG.SYS file to CONFIG.OLD, simply type:

REN C:\CONFIG.SYS CONFIG.OLD <Enter>

If you want to rename the CONFIG.SYS file to some other filename, simply substitute that filename for the CONFIG.OLD part of the example given previously.

After renaming your CONFIG.SYS file, run the Bridge-File's INSTALL program to reinstall the Bridge-File's device driver. Since you renamed your CONFIG.SYS file to something else (CONFIG.OLD if you followed the example above), your computer has no CONFIG.SYS file. The INSTALL program finds that there isn't a CONFIG.SYS file, so it creates one. This new CONFIG.SYS file will have only one line in it, beginning with the statement:

DEVICE=BRIDGE

Now the Bridge-File driver is the only driver called for in your CONFIG.SYS file. Reboot your computer by pressing **<Ctrl>-<Alt>-<Del>**.

If, after isolating the Bridge-File driver, your Bridge-File works properly, you have determined that the problem was caused by a conflict between the Bridge-File driver and some other item in your old CONFIG.SYS file. You can determine which of the other items in CONFIG.SYS was causing the problem by adding these items, one by one, to your new CONFIG.SYS. Since the Bridge-File driver should be at the bottom of the CONFIG.SYS file, try adding the line just above the Bridge-File driver in your old CONFIG.SYS file to your new CONFIG.SYS file. For example, if your old CONFIG.SYS file was:

```
FILES = 20
BUFFERS = 15
DEVICE=MOUSE.SYS
DEVICE=EXMEM.SYS
DEVICE=BRIDGE.DRV /PCAT:4
```

and your new CONFIG.SYS is:

DEVICE = BRIDGE.DRV /PCAT:4

try adding the line that says **DEVICE = EXMEM.SYS** to see if this statement conflicts with the Bridge-File driver. If not, you can keep adding lines from your old CONFIG.SYS file to your new one (rebooting the computer after adding each line) until you find the one that interferes with the Bridge-File.

Technical Support

Not every situation can be anticipated in a computer manual; although this manual guides you through the setup and operation of your equipment, you could encounter a situation where you need additional help.

SYSGEN provides technical support for answering customer questions about SYSGEN products. This service is free for registered owners of SYSGEN products. The number to call is:

Technical Support: (408) 263-1171

This line is staffed Monday through Friday between the hours of 8 A.M. and 5 P.M. Pacific Time.

We find that many calls made to our technical support staff would have been unnecessary if the customer had taken time to find the answer in the manual. Please take the time to see if the information you need is in this manual; if you have no success, then call Technical Support. We'll do our best to help you.

When you are ready to call Technical Support, jot down the pertinent information about your installation, as explained in the following section.

Before Calling Technical Support

To make the most effective use of your technical support time, and to avoid having to call back after obtaining more information, take note of the following recommendations. Each of these steps can help you get the maximum benefit from your phone call.

1. Note the model of the Bridge-File that you are working with, and the revision of the software. This information is clearly printed on the product packaging, on the diskette label, and on the serial number label on the bottom of the Bridge-File drive.
2. Make a note of the specific data concerning your personal computer, including the DOS version you are running, and the number and type of internal and external drives installed.
3. Try to be seated in front of your computer while making your technical support phone call to allow the specialist to guide you through any necessary procedures.

SYSGEN BBS

If your computer is equipped with a modem, you can use the SYSGEN BBS to obtain current information about SYSGEN products and software, and to download software upgrades. To access the SYSGEN BBS, you must complete and mail in your Product Warranty Registration Card.

You can also use the SYSGEN BBS to communicate directly with Technical Support staff members through the electronic mail facility. Contact Technical Support for the SYSGEN BBS number and line settings.

Completing the Warranty Card

To ensure proper warranty coverage, fill out and mail the enclosed Warranty Registration Card within ten days of the purchase of your Bridge-File. The completed warranty card ensures your access to new product information and technical support.

Limited Warranty for Equipment

SYSGEN, Inc. warrants that its standard hardware products sold hereunder will be free from defects in workmanship or material under normal use and service. SYSGEN's obligation under this warranty shall not arise until the end user of the Products

("Buyer") returns the defective product to SYSGEN's plant at 556 Gibraltar Drive, Milpitas, California 95035 U.S.A. The Buyer shall pay shipping costs of said defective products to SYSGEN, Inc. SYSGEN's only responsibilities under this warranty are at its option to repair or replace, without charge, any defective component part of such Products. The effective period of this warranty is one year for parts and labor from date of purchase.

This warranty is contingent upon proper use of the Product. This warranty will not apply if adjustment, repair or parts replacement is required because of accident, unusual physical, electrical or electromechanical stress, neglect, misuse, failure of electric power, air conditioning, humidity control, transportation, operation with media not meeting or not maintained in accordance with SYSGEN, Inc. specifications.

Except for the express warranties stated herein, SYSGEN, Inc. disclaims all warranties on products furnished hereunder, including without limitation, all implied warranties or merchantability and fitness; and the stated express warranties are in lieu of all obligations or liabilities on the part of SYSGEN, Inc. arising out of or in connection with the performance of the Products.

Appendix B

Specifications

Specifications for the 3.5-inch Bridge-File

Physical

Size (D x W x H)	8" x 5.75" x 1.63" (203mm x 146mm x 41mm)
Weight	2.65 lbs (1.2 Kg)

Environmental

Operating Temperature:	39°F to 124°F (4°C to 51°C)
Storage Temperature:	-8°F to +140°F (-22°C to +60°C)
Relative Humidity:	20% to 80% (non-condensing)

Data Storage

Recording Method:	MFM
Data Capacity:	Normal density: 720 kilobytes High density: 1.44 megabytes
Start Time:	Less than 400 milliseconds
Average Latency:	100 milliseconds

Operating Power Consumption

Read Operation:	1.80 watts (typ.); 2.37 watts (max.)
Write Operation:	2.34 watts (typ.); 2.91 watts (max.)
Seek Operation:	2.86 watts (typ.); 3.37 watts (max.)
Spindle Motor Start:	2.95 watts (typ.); 3.53 watts (max.)

Reliability

MTBF:	10,000 power-on hours or more

MTTR:	30 minutes
Error Rate:	Soft Error Rate: 1 per 10^9 Hard Error Rate: 1 per 10^{12} Seek Error: 1 per 10^6

Specifications for the 5.25-inch Bridge-File

Physical

Size (D x W x H)	8" x 5.75" x 1.63" (203mm x 146mm x 41mm)
Weight	2.65 lbs (1.2 Kg)

Environmental

Operating Temperature:	39°F to 115°F (4°C to 46°C)
Storage Temperature:	-8°F to +140°F (-22°C to +60°C)
Relative Humidity:	20% to 80% (non-condensing)

Data Storage

Recording Method:	MFM
Data Capacity:	Normal density: 360 kilobytes High density: 1.2 megabytes
Start Time:	Less than 400 milliseconds
Average Latency:	100 milliseconds

Operating Power Consumption

Typical:	4.4 watts
Idle:	1.8 watts

Reliability

MTBF:	10,000 power-on hours or more
MTTR:	30 minutes
Error Rate:	Soft Error Rate: 1 per 10^9 Hard Error Rate: 1 per 10^{12} Seek Error Rate: 1 per 10^6

Appendix C

Technical Reference for Bridge-File Adapters

The 1030 Adapter

Two different variations of the 1030 adapter are currently being shipped. These differ according to the type of computer for which they are intended. You must have the proper version of the 1030 adapter for your equipment to operate correctly. The basic variations are:

1030-AT: This variation of the 1030 adapter is designed to be installed in IBM PC/AT computers.

1030-PS/2: This version of the 1030 adapter is designed to be installed in the IBM PS/2 Models 25, 25 286, 30, and 30 286. It can be destinguished from other versions of the 1030 adapter by the fact that it has 40-pin connectors at JAD and JCA, instead of the 34-pin connectors found on the AT version.

1030 Adapter Connections

In any 1030 installation, there are three components that get connected to each other by ribbon cables. These are the 1030 **Adapter**, the diskette drive **Controller**, and the diskette **Drives**. There can be either one or two drives. The controller is usually a circuit board which plugs into the computer's PC-bus, but sometimes (as in the PS/2 Model 30 and in some compatibles) it is built into the computer's motherboard.

Connector JAD on the 1030 adapter is for the cable that connects the **Adapter** to the **Drives**. In most installations, the ribbon cable that normally connects the drives to the controller is used for this. An exception is the IBM PS/2 Model 30; this installation requires a separate cable (called the A/D cable, because it goes be-

tween the Adapter and the Drives) because the ribbon cable that comes with the computer won't reach all the way to where the 1030 adapter is installed.

Connector JCA on the 1030 adapter is for the cable which connects the **Controller** to the **Adapter.** This cable (called the C/A cable , because it goes between the Controller and the Adapter) is supplied with all 1030 adapters.

Jumper Positions for the 1030 Adapter

W1 (Address Select): This address jumper selection is factory set to correspond to the equipment that the adapter will be installed in:

- PS/2 Model 30: **372** hex
- PC/AT: **3F2** hex

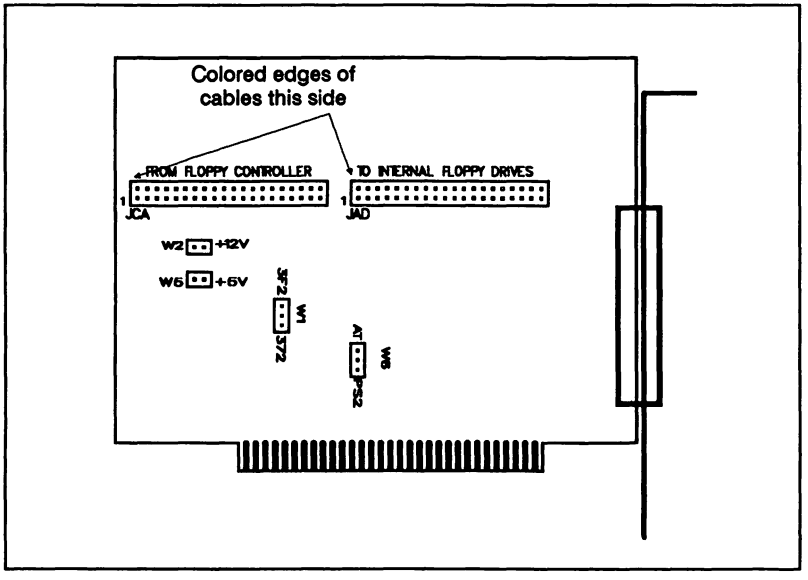


Figure C-1. *1030 Connectors and Jumpers*

W2, W5 (External Power): The 1030 adapter is factory set to operate from the host computer's internal power supply. If you are installing an external power supply on a Bridge product that uses the 1030 adapter, **jumpers W2 and W5 must be removed** from the 1030 adapter. If you are using a Bridge-Tape unit with a PS/2 Model 30 286, you must use an external power supply.

Failure to remove the W2 and W5 jumpers before an external power supply is connected can result in damage to both the Bridge product and the computer.

W6 (Density Line Inversion): If you are installing the 1030 adapter in a PC/AT computer, this jumper should be in the upper (AT) position. If you are installing the 1030 adapter in a PS/2 computer, this jumper should be in the lower (PS/2) position.

The 1030 adapters for the PS/2 Model 30 and the PC/AT are not interchangeable. Do not attempt to use these adapters in any system but the one they were designed for.

The 1050 Adapter

The 1050 adapter is a circuit board designed to replace the connection card used by the Model 50 to attach the diskette drives to the floppy disk controller on the computer's motherboard. In addition to fulfilling all of the functions of the standard connection card, the 1050 also has a connector for external drives. Signals are passed from this connector to another connector mounted on a bracket at the back of the computer by a cable called the A/B (for Adapter to Bracket) cable.

The installation of the 1050 adapter is very simple. The computer's standard diskette drive connection card is simply replaced by the 1050 adapter, the A/B cable is connected to the 1050 adapter, and the A/B cable's bracket is secured at the back of the computer.

Jumper Posjtions for the 1050 Adapter

W1-W3 (Disk/Tape selection): These jumpers should always be set towards the center of the board (the **disk** position). The illustration shows the location of the 1050 adapter's jumpers.

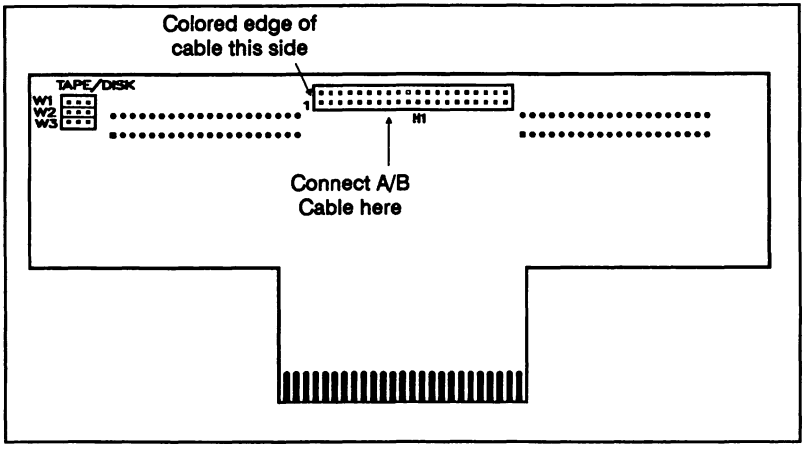


Figure C-2. *1050 Connectors and Jumpers*

The 1055 Adapter

The 1055 adapter is a circuit board that mounts vertically into connector J8 on the motherboard of the PS/2 Model 55 computer. The floppy disk interface cable that is normally plugged into J8 gets plugged onto connector J1 of the 1055 adapter. A second connector on the 1055 adapter, H1, is used by the A/B Cable, which routes signals for one or two external drives to a connector secured at the back of the computer.

Since the Model 55 computer always comes with only one internal 3.5-inch floppy drive, the 1055 adapter will only be able to support two external drives, giving a total of three.

Jumper Positions for the 1055 Adapter

W1 - W2 (Disk/Tape selection): These jumpers should always be set toward the middle of the board (the **disk** position).

W3 - W4 (+5V & +12V): These power jumpers are normally jumpered to allow +5V and +12V to power the external floppy drives or tape drive from the internal power supply of the computer. It is possible that you may need to have other cards plugged into the system that excessively load down the internal power supply. In this case, these jumpers should be removed and a SYSGEN external power supply can be used to power the external drives.

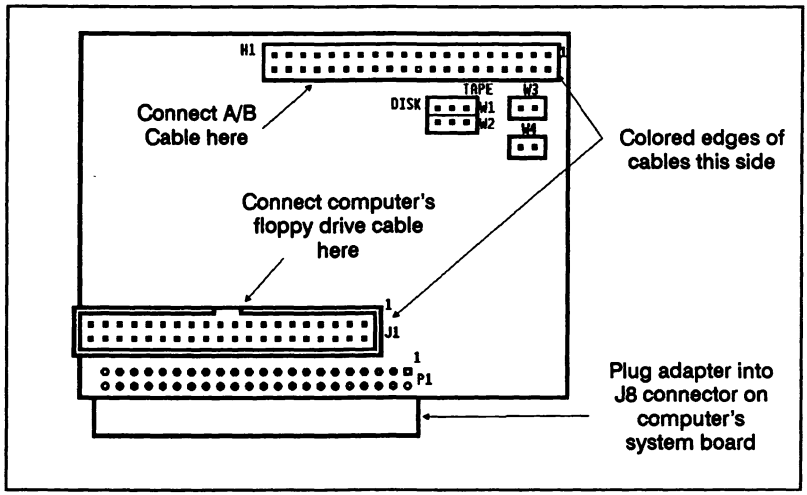


Figure C-3. *1055 Connectors and Jumpers*

The 1060 Adapter

The 1060 adapter is a circuit board that plugs into connector J1 on the motherboard of the IBM PS/2 Model 60 or 80 computer. The floppy disk interface cable, which normally is connected to J1, is then connected to a connector on the 1060 adapter. A second connector on the 1060 adapter, H1, is used by the A/B

Cable, which routes signals for an external diskette drive to a connector secured at the back of the computer.

Jumper Positions for the 1060 Adapter

W1-W2 (Disk/Tape selection): Both jumpers should always be set towards the center of the board (the **disk** position).

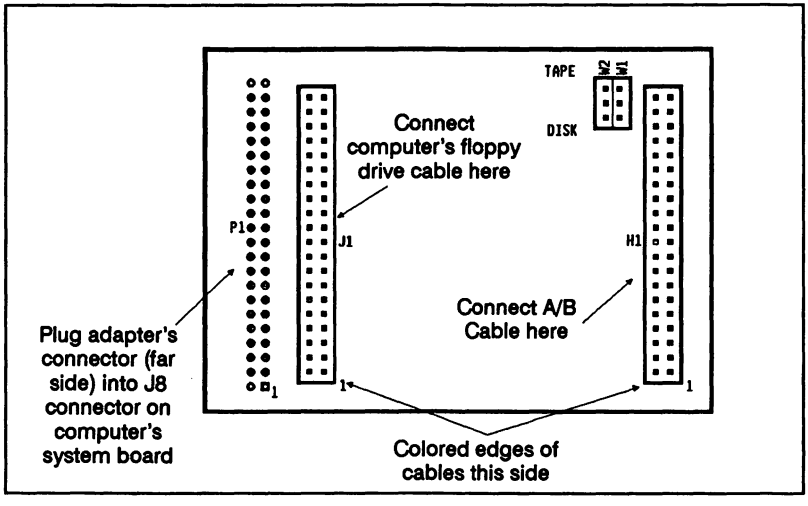


Figure C-4. *1060 Connectors and Jumpers*

The 1070 Adapter

The 1070 adapter is mounted on a sled and inserts into the right internal 3.5-inch floppy slot on the PS/2 Model 70 computer. An attached cable is routed to the back of the computer for external disk drive installation. The illustration shows the board with the sled removed.

Jumper Positions for the 1070 Adapter

W1 - W2 (Disk/Tape selection): Both jumpers should always be set towards the outer silkscreen marking (the **disk** position).

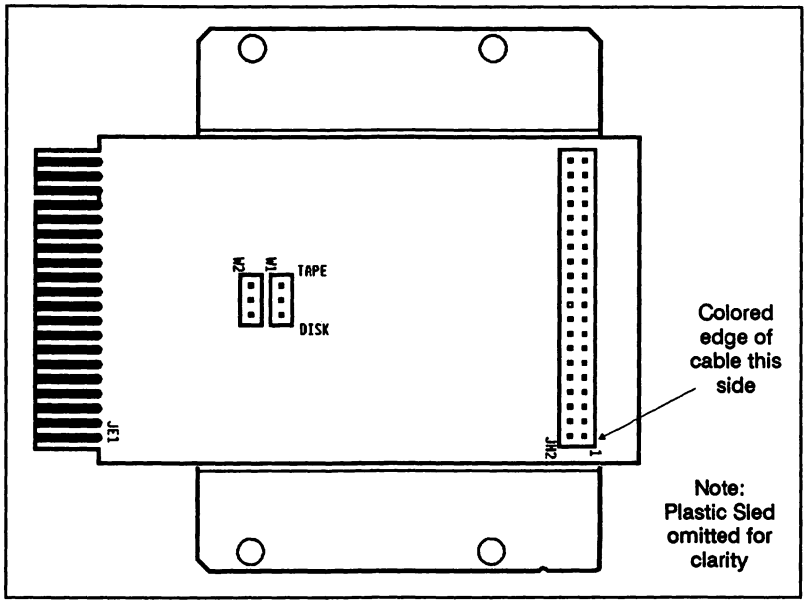


Figure C-5. *1070 Jumper Positions*

The 1090 Adapter

The 1090 adapter is mounted on a sled and inserts into the right internal 3.5-inch floppy slot on the PS/2 Model 90 computer, or the lower 3.5-inch floppy slot on the Model 95. An attached cable is routed to the back of the computer for external disk drive installation. The illustration shows the board with the sled removed.

Jumper positions for the 1090 adapter

W1 (3.5/5.25 selection): This jumper should be set towards the "3.5" marking when a 3.5-inch Bridge-File is installed, and towards the "5.25" marking when a 5.25-inch Bridge-File is installed.

When connecting two bridge-Files to the 1090 adapter, jumper W1 must be set to the drive type of the first Bridge-File in the chain (B:).

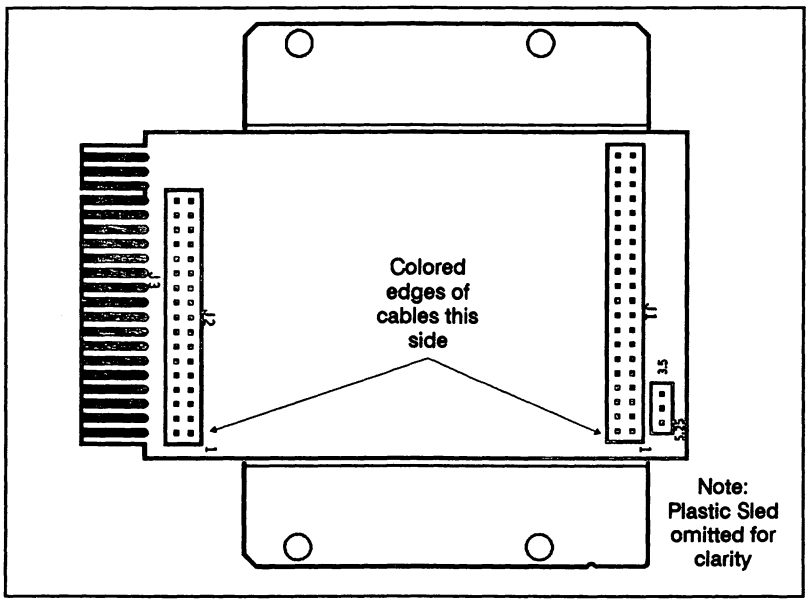


Figure C-6. *1090 Jumper Positions*

The Omni-Bridge Controller

The Omni-Bridge is an add-on high performance floppy controller that can be installed in addition to an existing floppy controller or can replace the existing floppy controller. The Omni-Bridge can control up to four floppy drives, and works with 3.5-inch and 5.25-inch high- or low-density drives.

SYSGEN recommends the use of the Omni-Bridge instead of the standard Bridge-File 1030 adapter in computers that do not have a high-density floppy controller, or where the installation of the 1030 adapter would be difficult.

This manual explains how to use the Omni-Bridge to connect a Bridge-File drive to a PC, XT, or AT computer. In this installation, the Omni-Bridge is installed in addition to the existing floppy controller. See the chapter titled *Installation, PC, XT, and AT Compatibles.*

Refer to the Omni-Bridge manual (supplied with the Omni-Bridge controller) for further information about the Omni-Bridge controller.

Appendix D

Auxiliary Power

Using Auxiliary Power

Some early computers with low-powered power supplies may require an auxiliary power supply for the Bridge-File drive.

In most installations, the Bridge-File draws power from the computer's power supply, consuming only 4.5 watts during normal operation. With this low power requirement, most systems do not require an independant power supply to operate the Bridge-File.

SYSGEN offers an auxiliary power supply for use in early PC systems or other systems where the computer's power supply may be marginal. For a Bridge-File to be used with an auxiliary power supply, two conditions must be met:

- The Bridge-File must be equipped with a power supply connector on the rear panel of the drive.
- The adapter must be correctly jumpered to route the power lines correctly.

Symptoms of Overload

Symptoms of power supply overload include:

- Unexpected system shut-downs
- Shrinkage of the raster pattern on your monitor
- Frequent unexplained system errors and data errors

Eligibility for Auxiliary Power

You can use the Bridge-File auxiliary power supply on most Bridge-File 3.5-inch drives connected to the following adapters:

- 1030 adapter
- 1055 adapter
- Omni-Bridge controller

Bridge-File 5.25-inch drives cannot be used with the auxiliary power supply because they do not have power input connectors. Other adapters cannot be used with the auxiliary power supply because they do not have removable jumpers for routing the power lines between the adapter and the Bridge-File drive.

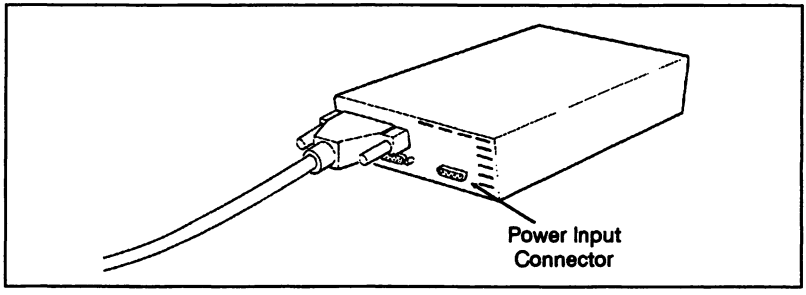


Figure D-1. *External Power Input Connector*

Installing the Auxiliary Power Supply

Follow these instructions for installing the auxiliary power supply

1. Check the adapter to make sure that the plastic jumper blocks are set as follows:

   1030 adapter: Remove jumper blocks from pins of jumpers W2 and W5

   1055 adapter: Remove jumper blocks from pins of jumpers W3 and W4

Omni-Bridge controller: Set jumper blocks of jumpers W1 and W2 to cover the two pins nearest the center of the board (nearest the white "OFF" marking)

2. Install the adapter as instructed in the appropriate installation chapter of this manual.
3. Plug the auxiliary power supply's D-shell connector into the matching connector on the back of the Bridge-File drive. Secure the connection by tightening the thumbscrews on the cable connector.

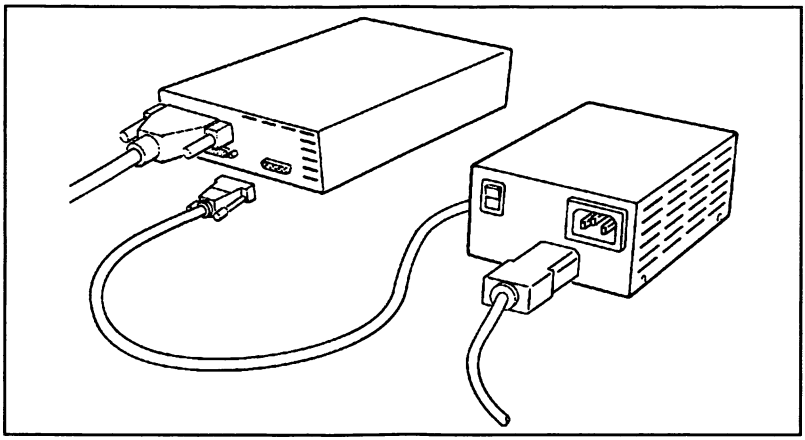


Figure D-2. *Connecting the Auxiliary Power Supply*

4. Plug the power supply's power cord into the power supply, and also into a power outlet near your computer.

Glossary

AC Power AC power (alternating current) is the electricity that is delivered through standard, domestic wall outlets. AC power comes in two voltages: 120 volts in the U.S. and Canada, and 220 volts just about everywhere else. Before you plug anything into a wall outlet, make sure that it will work with the AC power voltage that is available in your locale. Most equipment that can be plugged into wall outlets will have the appropriate voltage marked on it.

Adapter An adapter is a circuit board that allows you to plug a device, such as a printer, disk drive, or video monitor, into your computer.

Backup A backup consists of duplicate data stored on a floppy diskette or cartridge tape for later retrieval. This data is usually retrieved only if the data stored on the primary system becomes unreadable.

Bezel A bezel is the stylish front panel of a computer or computer accessory.

Bit A bit is the basic unit of computer information. A bit can in one of two states: 1 or 0.

Boot The term boot refers to setting up and loading the operat ing system into the computer's main memory. This is an automatic process that occurs in two forms: the warm boot, caused by simultaneously pressing the **<Ctrl>-<Alt>-<Del>**, and the cold boot, caused by turning the computer system's power on.

Byte A byte is composed of eight bits. A byte can arranged in any one of 256 combinations from 00000000 to 11111111. A byte is nominally accepted to be equivalent to one character of information.

Card Edge Connector A card edge connector, or simply edge connector, is a type of connector that uses gold-plated conduc-

tors built into the edge of a circuit board. A card edge connector can connect a circuit board to a cable, as with most disk and tape drives, or can connect a circuit board to another circuit board, as with IBM PC or PS/2 expansion boards.

CONFIG.SYS Each time your computer is turned on, the operating system examines the CONFIG.SYS file to determine what special devices (such as memory boards, optical storage units, or other types of drives) are attached to the system, and to access the software (device driver) for each of these devices. Devices are assigned logical designations (essentially a single-letter identifier) in the order in which they are listed in CONFIG.SYS.

Configuration The configuration consists of data describing the way the computer is set up; for example, how many diskette drives it has, how much memory it has, and so on. Many computers store information about their configuration in a special area of memory. Whenever the computer is turned on, it checks this area of memory to determine the current configuration.

Controller A controller is a circuit board that controls a computer accessory, such as a disk drive or tape drive. The difference between an adapter and a controller is that a controller generally has more built-in intelligence, and can perform independent functions while the processing unit of the computer is performing other operations.

Daisy Chaining Daisy Chaining refers to a means of interconnecting equipment where each device in the chain has a connector in and a connector out to the next device in the chain.

Device Driver A device driver is a specialized type of software that interacts with the operating system to run (drive) accessories that are attached to the system. For example, the Bridge-File device driver, when installed, lets the operating system access all the features of the drive.

Diskette Drive A diskette drive is the storage device inside your computer (or attached externally) that reads and writes diskettes.

DOS DOS stands for Disk Operating System. This is the standard IBM PC operating system. The version from IBM is called PC-

DOS while the equivalent version from Microsoft is called MS-DOS.

D-Shell Connector A D-shell connector is a type of cable connector that has two or three rows of contacts enclosed in a trapezoidal metal shroud. The trapezoidal shape of the shroud is what gives this connector its name. D-Shell connectors are used on all externally mounded SYSGEN drives and their interface cables. Because of their shape, D-shell connectors cannot be improperly attached to another connector.

Edge Connector- See Card Edge Connector

Electrostatic Discharge (ESD) The small blue sparks you see when you walk across a carpeted room and touch a grounded point such as a light switch are a form of ESD. These sparks are caused by static electricity, and can impart a shock of up to 15,000 volts. Components on a printed circuit board can generally take no more than five volts. ESD can damage or destroy these devices. Take static discharge precautions whenever working around sensitive components.

Electromagnetic Interference (EMI) The term EMI refers to radio waves which disrupt electronic equipment. Particularly strong EMI can cause computer malfunctions or data processing errors. The most common sources of EMI are radar and radio transmission equipment. Certain types of computer monitors can also cause EMI.

Expansion Slot An expansion slot is a internal connector situated on a computer's motherboard (the large board mounted on the base of the computer cabinet) or sometimes oriented vertically inside the chassis. Accessory boards and optional controllers for a variety of products can be plugged directly into the expansion slot to increase the capabilities of the computer.

Fixed Disk Drive A fixed disk drive, sometimes called a hard disk drive, is a data storage device using magnetically coated metal disks to store large amounts of data. The magnetic disks are permanently mounted inside the drive.

Formatting Formatting is a means of structuring and ordering the data stored on most types of media. In the case of a diskette, formatting the diskette writes addresses and other information

onto the diskette's magnetic surface so that files can be written and retrieved.

Grounding Pad A grounding pad is an anti-static floor or table mat that conducts static electricity away from electronic components to prevent damage by electrostatic discharge.

Header Connector A header connector is a row of gold-plated pins soldered to the component side of a circuit board. These can mate to a socket connector on a cable or on another circuit board. They can also mate to jumper blocks, which can connect one of the gold pins to another.

Head Protector A head protector is a disk-sized, flat sheet of cardboard or other shock-absorbing substance designed to prevent damaging impacts to the sensitive read/write heads of a drive. A head protector should be inserted in each diskette drive in your system whenever you move or ship the drive.

I/O Address An I/O address is a number assigned to an adapter or controller allowing the computer to send specific instructions to these devices. Each controller or adapter in a computer must have a unique I/O address. If two adapters or controllers have the same I/O address, the resulting conflict can cause the computer to halt. For example, the I/O Address of the SYSGEN 1030 Adapter is set to 372 (hexadecimal) for applications involving the PS/2 Model 30 or PC/XT computers, and to 3F2 for PC/AT applications. If this address conflicts with another controller or adapter in your computer, you must change one of the adapters to a different I/O address or remove the conflicting board from your system.

I/O Cable An I/O (input/output) cable is a cable used to route data between devices attached to a computer. For the BRIDGE product line, the I/O cable is a 37-position round cable that connects the adapter to the external drive.

Interface Cable - See I/O Cable

Jumper Block A jumper block is a small block of plastic with a metal insert, that is used to connect two gold-plated pins on a circuit board together. Jumper blocks are used to make connections on a circuit board to set the board for certain applications.

Megabyte A Megabyte is a unit of measurement nominally accepted to be a million bytes. The actual number of bytes per megabyte is 1,048,576.

Micro Channel Bus The Micro Channel bus refers to the I/O bus architecture used in the IBM PS/2 Model 50, 50Z, 55SX, 60, 70, and 80 computers. Options and adapter boards designed for the Micro Channel bus cannot be used in PC-Bus computers, including PC, XT, AT, and PS/2 Model 25 and 30 computers.

Motherboard- See System Board

Pin 1 Pin 1 is the first pin, finger, or connector of a standard cable connection. On cables, Pin 1 is identified by a colored stripe along one edge of the cable.

On circuit board connectors, Pin 1 is usually identified by a white "1" marking near one end of the connector. Sometimes a "2" marking is used to identify Pin 2, which is located next to Pin 1 on the connector. Either way, the colored stripe on the cable should be oriented towards the white "1" or "2" marking.

Pin 1 is also identified on the solder-side of a circuit board (the side with no components) by the use of a square pad instead of a round pad for the solder joint.

PC Bus The PC Bus refers to the I/O bus architecture used in IBM PC, XT, AT, and compatible computers. The PC Bus is also used in the PS/2 Model 25 and 30 computers, but not in the PS/2 Model 50, 60, 70, or 80 computers. Options and adapter boards designed for the PC-Bus cannot be used in Micro Channel Bus computers.

Random Access Memory (RAM) RAM is the memory that the computer uses while processing data.

Read/Write Head The read/write head is the device within a tape drive or diskette drive that reads and writes data to the media. Physically, it is a small, slippery electromagnet mounted so that it is in contact with the tape path or disk surface. Since the read/write head is in contact with the media, it should be cleaned periodically to prevent damage to the media and to ensure proper performance of the drive.

Reconfiguring- See System Reconfiguration

Reference Diskette The reference diskette is used with PS/2 Models 50 and abpve to tell you about the computer and allow you to change the computer's configuration. This copy of this diskette is used to change the computer's configuration when a SYSGEN adapter or controller is installed.

Ribbon Cable These flat ribbon-like cables are used to carry electrical signals between various parts of the computer system. The ribbon cables used in most computer systems have 20, 34, 40, or 50 wires. The colored stripe on one edge of the cable marks Pin 1 on the cable's connectors.

Socket Connector A socket connector is a type of cable connector that mates to a row of pins soldered to a circuit board.

System Board A system board is the primary circuit board within a computer containing the processor, and, generally, many of the logic circuits required for accessing both internal and external devices such as system memory, video monitors, modems, printers, and other devices.

System Reconfiguration Performing a System Reconfiguration consists of updating the computer's configuration information so that it recognizes the installation of a new option or adapter.

Voltage Spiking Voltage spiking consists of surges in the voltage of an AC power line. This may be caused by certain types of equipment plugged into the AC circuit. All of your computer equipment should be plugged into an AC power circuit that is free of voltage spikes. A power filter or isolation transformer can sometimes filter out the worst of the spikes.

Working Copy A working copy is a duplicate of an important software diskette such as the PS/2 Reference Diskette. The original Reference Diskette should always be stored in a safe place and used only to make more working copies.

Wrist Strap A conductive band worn around the wrist. A wrist strap should be connected by a wire to a grounded point to conduct harmful static electricity away from sensitive electronic components. See also Electrostatic Discharge.

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FCC Information

This equipment generates and uses radio frequency energy and, if not installed and used properly in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications of Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on and noting the results, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Relocate the computer with respect to the receiver
- Move the computer away from the receiver
- Plug the computer into a different outlet so that computer and receiver are on different branch circuits

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful: *Interference Handbook.* This booklet is available from the following sources for $2.50 postage-paid, price and availability subject to change.

U.S. Government Bookstore
World Saving Building
720 North Main Street
Pueblo, Colorado 81003
(719) 544-3142

Consumer Information Center
Department 169T
Pueblo, Colorado 81009
(719) 948-3334

Warning
Only the manufacturer's shielded host interface cable is allowed for use with external subsystems. Using other types of cables will void the manufacturer's warranty and violate the FCC rules and regulations.

4433 Fortran Drive
San Jose, CA 95134

VALUESTOR